

Keep kids learning

Dear Parents/Caregivers

This student work pack is a resource for you to support your child's learning from home during this time. We know that every child is unique in their learning journey as they have different interests and strengths. Families can use these packs in different ways to suit their needs.

These learning materials can be used when and as you think best for your child. There is no requirement for students to complete everything contained within the pack, or to do the activities in any order.

To assist parents/caregivers to use these materials, we have divided the materials contained within the pack into ones to use daily:

1. English - especially reading with your child
2. Maths - many can be done actively, with materials around your home
3. Wellbeing – we know it is so important at this time to keep students healthy and work on their strengths

There are also other learning areas you can use as projects or fun activities with your child:

1. Arts
2. Humanities and Social Sciences
3. Science

If you would like to ask about these activities, you can email us on homelearning.doe@nt.gov.au

There are also a number of online educational resources and activities that you may like to use with your child. Please use the following internet address <https://nt.gov.au/learning-together> to access these materials.

Thank you

We acknowledge and thank our state and territory government colleagues for their materials contained in this pack

Literacy

This book has literacy activities to support your child in their learning. These activities support their **reading**, **talking** and **writing** skills.

Children learn by copying adults. Learning with you and other family members in a fun way is important. They also learn by playing and doing things themselves and with other children. They learn to talk by listening to adults and other children. They learn about reading through listening and by practising. Mistakes are part of their learning.

Many of the activities encourage family participation and can be done with younger or older family members. We encourage this, but remember there are many activities that your children can do by themselves. If they can read the pages by themselves they may only need a little guidance.

Encourage your child to listen, talk, read, write, think, view and problem solve. This will support your child learning through talking. Avoid interrupting and listen to the whole of what they are communicating. Give positive messages to show that you are interested (nodding, smiles, gestures).

It is also important to read, write and talk in your home language as well as in English.

How can I support my child?

Read through the activities first. Start with an activity that you are comfortable with and that suits your child. For example, if you read with your child, start with reading a book. If you cook with your child, read through a recipe with them.

The activities are a guide, and you can change these activities to suit your child. Think about - what is your child interested in? What games or equipment do you have that you can use to support their reading, talking and writing?

Some activities you can do together are: reading together, drawing, singing, role play, storytelling, reciting poems, game playing and rhyming.

When reading together, take turns with your child to read a story. Ask them to share what they are thinking. What does the story remind them of? What questions do they have?

If your child is not ready to start writing on their own, you can give them support. This can mean talking together about their ideas and writing these down for them. Read a story and find the important words. Write these words out for your child and encourage them to have a go at writing them too.

Give them positive feedback and ask them questions. Try to ask open-ended questions. These are questions that need more than a yes or no answer, and that ask them to think and explain. This will boost their reading interest, increase their thinking skills and help them to understand the story.

Open ended questions also build oral language skills as you explore or play together. Not all learning happens at the desk.

Literacy Resources

See the outline below to help guide you through the Literacy Resources

At home literacy activities – talking, reading and writing

Description: These are ideas for activities and learning experiences with your children. Most of them are activities that can be repeated as often as you would like. Some may be things you would like your child or family to do every day or every week.

Visual prompts

Description: These are a range of photos, images and pictures that your child can use to support some of the activities in the 'At home literacy activities'.

Comic strip templates

Description: These are blank comic strip templates that children can use to write their own comics. See 'At home literacy activities' for more information.

English glossary Year 6 Unit 1

Description: This is a support page not an activity.

This is a glossary of terms that include language features and tools that your child can use in their writing.

Character trait word list

Description: This is a support page not an activity.

This is a list of words that can be used to describe characters. Your child can use this to support their writing when writing stories. These words help to give more detail about characters when children use them in their writing.

Similarities and differences

Description: This is an independent activity.

Once completed the child can use it to help them write their own story or information text. It will help remind them of the features that they need to include.

Time: This is approximately a 15 minute activity. It may take longer if the child would like to explore stories and information texts to check their answers.

What is needed: This can be done with no additional resources. A child may want an example of a story and an information text so that they can explore and check answers.

Instructions to support: The child needs to sort to 'structural features' into one of the 3 boxes. In the blue box they put the features that are in both stories and information texts.

In the orange box they put the features that are just used in stories and not information texts.

In the green box they put the features that are just used in information texts and not stories.

Short stories and novels: Venn diagram

Description: This is an independent activity. They will need some understanding of short stories and novels to be able to do this activity.

Time: Approximately 15 minutes

What is needed: No additional resources

Instructions to support: If your child doesn't have the prior knowledge about short stories and novels you could discuss and share some examples of your favorites with them.

Story elements: plan your own story

Description: This is a planning template that children can use to write their own story. It can be used independently or as a group. It can be repeated and could be a weekly activity.

Time: Approximately 30 to 60 minutes for activity.

What is needed: No additional resources. If possible letting the child discuss and talk about their ideas with someone before or as they do this activity can help them to develop their ideas and be inspired.

Instructions to support: If you want to use this as a template so that your child can repeat the activity then they could answer the questions in their notebook. They need to think of an idea to write about and answer the questions in each box. These questions will help them develop their story. Once completed, this activity could then be used to support the child in writing their story. They would need another 30 to 60 minutes to write the story from the plan to a first draft. If they are interested, they could then get support to edit their story and develop it into a published draft. If you are not confident to support them then there may be another family member, friend or a contact at the school who could help them over the phone or internet. Only encourage them to develop it into a published piece if they are interested.

Guided Reading practice

Description: This activity can be done individually, with other children or with an adult if needed. It can be repeated and could be a weekly activity.

Time: This activity can be done in stages across the day or week. It doesn't need to be done all at once. It will depend on how long the story is or how long it will take. It could be three 30 minute sessions or even longer.

What is needed: A book or reading passage that is a story with characters in it will be needed for this activity.

The child will need to read the story (it should be at their reading level) or have a story read to them. There are activities to do before the story is read, after the story is read and while the story is being read.

Instructions to support:

This is a template or tool that a child can use as a reading activity.

It can be done as often as you like after a story has been read by or with the child.

The child can use their notebook rather than the template to answer the questions in the template so that it can be repeated.

Air pollution

Description: This is a read and then respond activity. It can be done independently if the child can independently read the reading prompt on the page.

Time: This activity could take 30 to 60 minutes.

What is needed: No additional resources are needed. In section 'd' it mentions to use the 'Video-ideas: the transforming of an informative text to a narrative model' this is not available. The 'Similarities and differences' activity mentioned previously can be used to help instead.

Instructions to support: Get your child to read the prompt on the page or read it with them if they need support. They then read through the sections and answer the questions. In section 'd' they begin planning how to turn the information text into a story. In section 'e' and 'f' they write the story. This activity can be done in sections for example sections 'a' to 'c' on one day, section 'd' on another day and then section 'e' and 'f' on the last day.

Terms and Definitions

Description: This is a game-like activity. The page will need to be cut out for the child to use it. They can play it independently or with others. It will be more fun for them to have a partner (adult or child) do it with them.

Time: This activity could take 15 to 30 minutes, so long as the child is interested.

What is needed: Scissors will be needed to cut out the cards on both pages. If you don't have scissors a ruler could be used to neatly rip along the lines.

Instructions to support: Read the hot tip to help you understand the game. It is a memory game matching up the definition with the term. To help they could read through the terms and say what they think the definition is first and then search the definitions to see if they are right. Children can match all the terms and definitions this way first, then mix them up and play the game.

At Home Learning Literacy Activities (Talking, Reading and Writing)

Talking for learning

- Ask your child to discuss with you a wide variety of topics. Some topics will come up in day to day activities or other learning activities, other topics that you could initiate discussions about could be: different jobs, what jobs do you think are most important, what would you like to do for work; families, are they all the same or are some different, what makes a family; holidays, favourite place to relax, most important bit of knowledge you have, most important things you do.
- See 'Ways to help develop your child's thinking and talking skills' page.
- Encourage your child to talk more deeply about a topic, so ask for more information, ask why, ask for examples, see if they can explain something a different way.
- Discuss different ways to solve problems. What would happen if...?
- Ask your child to give reasons for his or her choices when making a decision.
- Listen and respond in ways that encourage further thinking aloud, rather than ending the conversation with your opinion.
- Remember not to talk too fast, talk at a normal pace and volume and use adult words. Encourage them to ask about words they don't understand and explain new words or topic specific words to them.
- If possible, help your child listen to and share ideas in a safe way with a range of people from various backgrounds and age groups. This could be with family members, over the phone or if you have access over videos online.

Sharing opinions

- Listen to your child talk about a story they have read, a picture they like, an activity they have done or a favourite memory.
- Ask them to share why they chose it, what they like about it or don't and why.
- Ask questions to find out more information. Encourage your child to write and draw about what they have talked about.
- Is it appropriate to add a diagram to support what they were talking about?

Talking about books or shows

- Talk to your child about the choices an author or filmmaker might make to create a book, play or film in a particular way. If your child is interested they might like to investigate this further.
- Before and after viewing the show/movie, discuss the topics, characters, values and attitudes in it.
- Talk about language choices and why characters look or behave in certain ways.
- What is the purpose of the writing or film?
- Does it change the way you feel or think about a certain subject?
- How do the issues in the writing or film meet with the values and attitudes in your home culture?
- Some responses you could use with your children could be: "Tell me more!", "That's interesting!", "I never thought of that",
- Remember your child doesn't need to have to have a convincing argument for everything, and as a parent you don't have to know everything. Just listen to them and help them join in a conversation.

Remember:

- Don't lecture but ask questions and encourage thinking.
- There aren't always right or wrong answers.

Saying it out loud

Singing songs, chanting rhymes and poems helps your children project their voice, learn rhyming and develop confidence in speaking.

- Share your favourite poems, rhymes, chants or songs with your children.
- Learn them together. Practice and perform for other family members friends or record to share with others.
- You can make costumes or props for effect.
- Have a go at changing one to make it new or making up a new one together.

See if your child can change or write their own.

<p>Read everyday Listen to your child read every day. Your child could read books at home, pamphlets, instructions, cookbooks, boxes, writing you or other children/adults have written. If you have access to online resources see 'Book online'.</p> <p>Here are some ideas to use but remember some reading should just be for pleasure. Also see the 'Questions to ask about reading' page for more ideas and questions to ask.</p> <ul style="list-style-type: none"> • look at the cover, title, pictures and talk about what the book might be about • talk about the story so far and what might happen next • after reading, talk about the story and ask questions • talk about the pictures and how they add meaning to the text • take turns when reading a harder book. <p>Remember the three Ps for new words: pause, prompt, praise. That is, allow your child time to work out the word (pause), use clues taken from the context (prompt) and praise your child for trying. If necessary, however, simply tell your child the word.</p>	<p>Having fun with voices</p> <ul style="list-style-type: none"> • Try reading with different voices, lots of emotion, invented sound effects and funny faces. • Change the tone in your voice, vary the loudness or softness of your voice. <p>Have fun and enjoy it.</p>
<p>Books online If you can, find a book online. If you are searching for a suitable book to read, try</p> <ul style="list-style-type: none"> • Entering a publisher or an author's name into a reliable search engine, such as Google. • Some reliable publishers are Scholastic, Penguin, Allen & Unwin and Pan Macmillan. • These publishers have their own databases that will allow you to preview recent releases, read sample extracts, covers and read brief overviews. • Some sites you could visit are: Oxford Owl, Storyline Online, International Children's Digital Library, Mrs P's Magic Library, Open Library, Amazon Free Kids Books, Barnes and Noble Free Nook Books for Kids, Vooks Free. <p>The public libraries can also be accessed online and digital resources can be borrowed. If you or your children are not already members you can join online. Many of the libraries also have Facebook pages and have begun doing story times online. If you have Facebook you could look at what libraries are sharing online with your children.</p> <p>You can also find online books that are read to you.</p>	<p>Read together</p> <ul style="list-style-type: none"> • Read with your child. • You could take turns. • You could be a different character each. <p>Your child may just enjoy hearing you read to them. Together you could create a special reading place in your home with your child's favourite books within easy reach. Let your child help decorate it with patterns, shapes and designs.</p>
<p>Read for others Choose an appropriate book to read to a younger family member or friend.</p> <ul style="list-style-type: none"> • How can you make the story exciting? • Practice reading it before you read it to the family member or friend. • If you can, you could record yourself reading and share with family members or friends not there. <p>You could make your own drawing to go with the story or puppets to act it out.</p>	<p>Making connections</p> <ul style="list-style-type: none"> • Ask your child which parts of the book they found exciting, funny or different and why. • Is there another story, movie, memory or picture that the book they just read reminds them of? <p>How does it remind them of it?</p>

<p>Interesting words and sentences</p> <ul style="list-style-type: none"> • Look through books, magazines or other print materials you have at home with your child. • Search for interesting words and sentences. • Cut them out to make a collage or write them down (you could create an interesting word/sentence poster or book). • Encourage your child to use these in their own writing. • Chose a word together and see how many interesting sentences you can come up with using it. Who can come up with the most, do they all make sense? • You could write these on pieces of paper (see story chain) and make sentences or paragraphs with them. 	<p>Photo album or scrapbook</p> <ul style="list-style-type: none"> • With your child, make a photo album or scrapbook this can be with real photos, with images from magazines and newspapers or family drawings. Alternatively, you could use the visual prompts pages. • Your child can then write captions or stories to go with the photos and pictures. <p>Have fun with it. If possible, use different colours or types of pens/markers. If you have access to a computer, then your child could use it and take their own photos around the garden or of family members.</p>	<p>Family joke journal</p> <ul style="list-style-type: none"> • Family joke journals can be created by interviewing family members and writing down favourite jokes. This could be done via phone, FaceTime or messenger if your children want to access family members that do not live in the same household. • Discuss which jokes were the favourite. Are there any similarities. • Develop some rules or guidelines for creating a good joke, ie 'A Jones family joke...' • Your child can then write new joke, come up with their own ideas to add to the joke journal. • Your child or as a family you could write and draw or add images to support the jokes, if you have a computer, they could publish them in a word document. <p>This could also be done with poems.</p>
<p>Visual prompts</p> <ul style="list-style-type: none"> • Give your child a comfortable space to write in. • Let them choose one of the visual prompts or a photo or image they like from around the home. • Spend 5 minutes talking about the image (either with another child or adult). When children talk before writing it helps generate ideas. • They may like to plan out their writing before they write. They could write a story, information text or a persuasive text. Let them decide what style of writing they'd like to do. • Give your child time and space to write about their prompt. (15 to 30 mins). • Let them share and talk about what they have written to help generate more ideas and get some feedback (see responding to your children's writing). • Give them space again to write about their prompt, writing more or developing/adding to what they have already written (15 to 30 mins). • Again, let them share their writing. • If your child wants to continue with it or publish it give them the opportunity to do so. • Children can choose a prompt and write every day. Remember the more they talk and share, the more ideas and feedback they get to add detail and have fun with their writing. 	<p>Movies and TV Shows</p> <ul style="list-style-type: none"> • Try selecting a show or a movie from a TV guide. Your child could write a letter or design a poster to persuade you to let them watch the show/movie. • They need to think about reasons why and explain their point. • Encourage them to use strong words that encourage you to believe and get persuaded by them. • Children could use the show/movie to inspire their own story, changing it to make it their own or writing the next show or movie sequel. <p>You could encourage your child to:</p> <ul style="list-style-type: none"> • Write a story • Create a cartoon • Write a play or • Acting out a scene or show. <ul style="list-style-type: none"> • Get them to talk about, draw and/or plan it out before they write or create it 	

Comic strips

- Comic strips give your child the chance to improve their dialogue writing skills, and to work on their understanding of character development, in a fun activity which combines writing with the use of a series of visuals.
- If you have comics or newspapers at home your child could look at and read them for ideas.
- Your child might like some scrap paper to plan out their comic first.
- There are some blank comic strips that your child could use to write their own comic, or they may wish to do their own boxes.
- They can cut and paste photos or pictures to create a comic if they don't want to draw.
- Focus your child's attention on what the characters are saying or thinking in the comic. They can add more speech or think bubbles to the templates if they want.
- Get them to share their comic with other family members. Does it make sense? Is more information needed?
- Have fun with it.

Instructions

- This activity is about having fun with instruction writing.
- Look in recipe books or art books that you may have at home at how the instructions are written. They will include things like titles, numbered or bulleted points, action words (verbs) to tell you what to do, time connectives (first, then, next, last), photos or diagrams with labels etc.
- With your child brainstorm different 'silly sets' of instructions that you could write.
- For example:
 - How to make the most disgusting sandwich in the world
 - How to make the best hug
 - How to make a friend
 - How to make laughing powder
- Have your child choose one of the ideas and make up a set of 'silly' instructions with the ingredients, steps and diagrams or images.
- Have fun reading and sharing.

Story chain

- This activity can be done together or individually. The idea is that you make a chain of writing. Your child could write a word on each piece of paper and join them together to make a sentence or a sentence on each piece to make a paragraph.

Making a chain

- Make a chain by cutting or ripping paper into strips.
- Write on the strip before you join them.
- Take the two ends of the strip and glue, staple or sticky tap them together.
- With the next strip, thread it through the last one before joining the ends.



What if challenge

- This challenge helps encourage students to see links between posing of interesting hypothetical questions and the creation of an entertaining piece of writing.
- To begin this activity get you child or together as a family come up with 'what If questions' and write each one down on a different piece of paper. The more off-the-wall the better!
- For example, 'What if everyone in the world knew what you were thinking?' or 'What if your pet dog could talk?'
- Fold the questions up and put in a container so that your child can randomly choose one (keep the other questions so that you can do this activity again another day or week).
- Discuss the question that your child chose (discussing and hearing ideas will help them be able to write about it).
- Your child can then write a story inspired by the question and discussion or an answer to it. This could be open ended writing (as long as they want to write) or you could set a challenge and give them 10mins to write as much as they can about it.

Responding to your Child's Writing

- Read your child's writing or have them read the writing to you.
- Comment on the positive aspects. For example, "I really like the way you've described this."
- Focus on **one** thing to encourage them to develop
 - Correct usage of full stops and capital letters
 - Adding describing words or actions
 - Correcting tense
 - Adding detail
- Adding different or interesting sentences

Spelling

- All writing activities are related to spelling, help your child with those areas of spelling with which you feel confident.
- Remember that not all English words can be spelt correctly by "sounding out", e.g. the words "you" and "said".
- Try using different spelling strategies, such as sounding out the sounds of the word; breaking a word into parts (syllables) and spell each part; seeing if the word looks right.
- Talk about how you spell and what you do when you don't know how to spell a word.
- Provide a dictionary and use it together. Remember that dictionaries are more useful if your child has a knowledge of the alphabet and how a dictionary works. Talk about how you need to use the dictionary sometimes.
- Encourage your child to practise new words, say them, write them from memory and then check them.
- If your child can't find a strategy to help spell the word; simply tell them how it's spelt.
- Encourage your child to try to spell new words, then praise the parts that are correct, and suggest what else is needed. For example, if your child has written "litle" for "little" you might say, "You have five of the six letters right. One of the letters should be doubled. Can you tell which one it should be?"

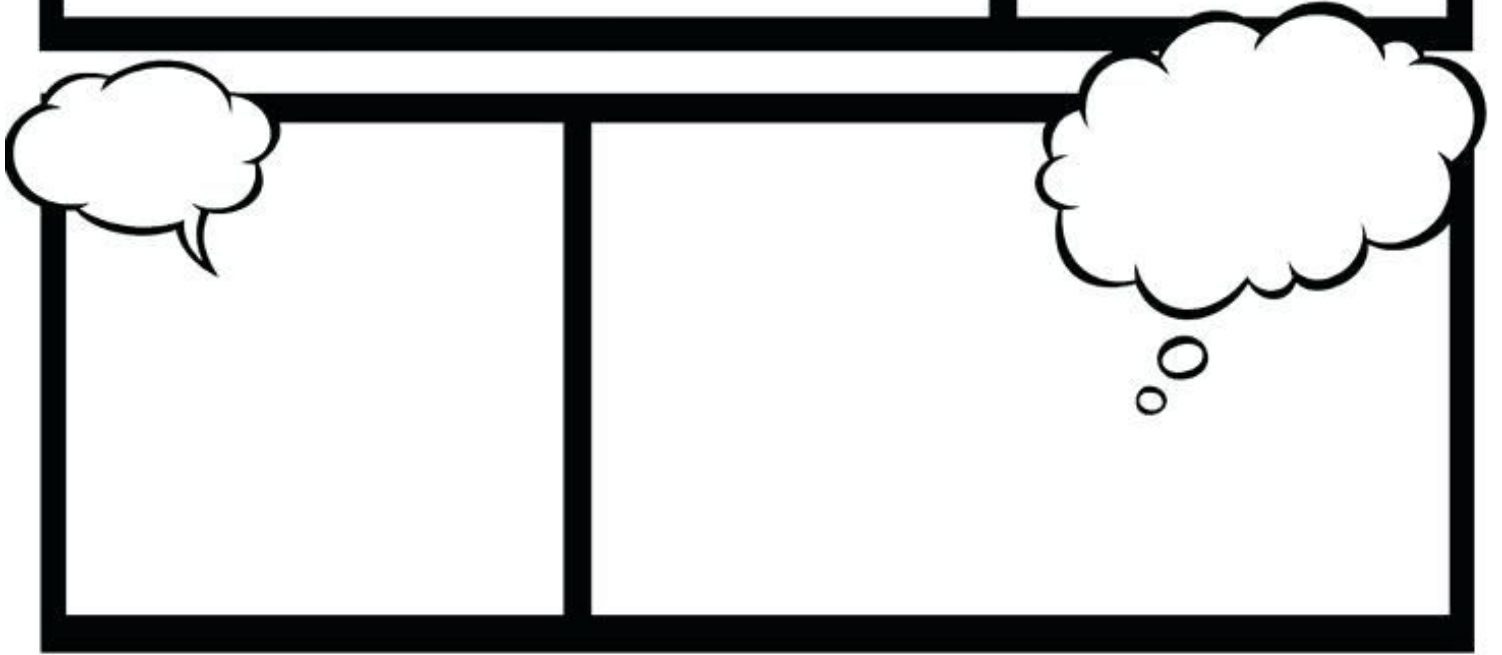
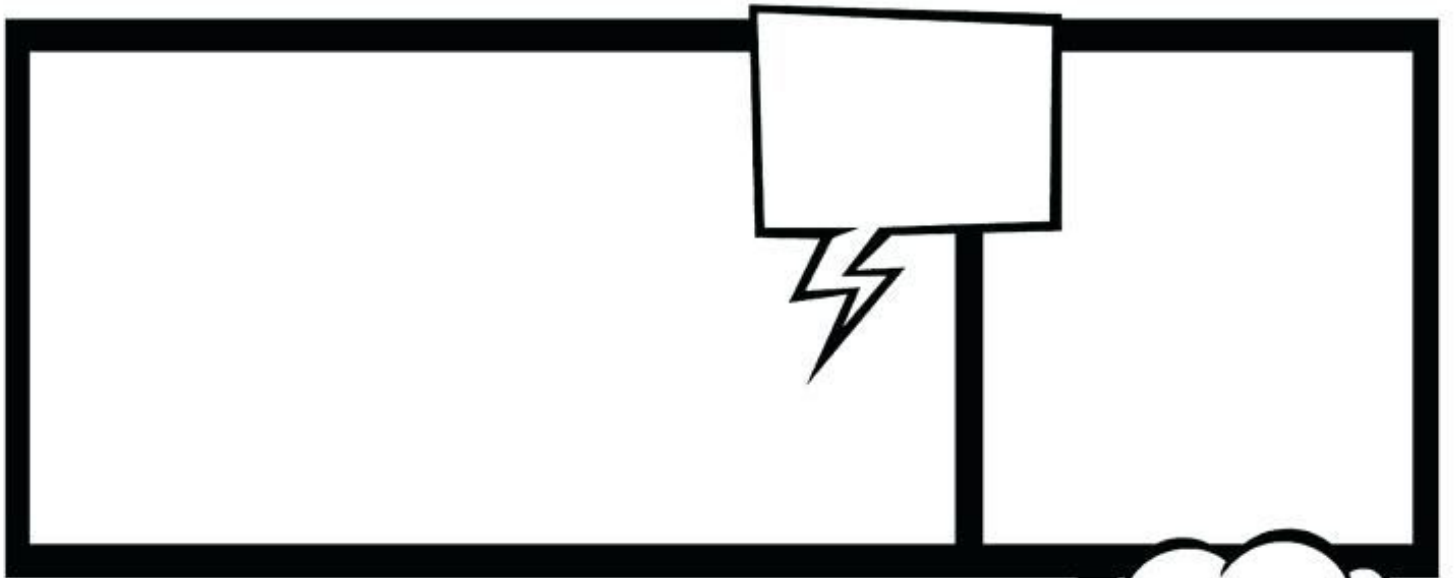
To help develop spelling and vocabulary you can play word games such as I Spy, Scrabble, Boggle, Scattergories and crosswords.

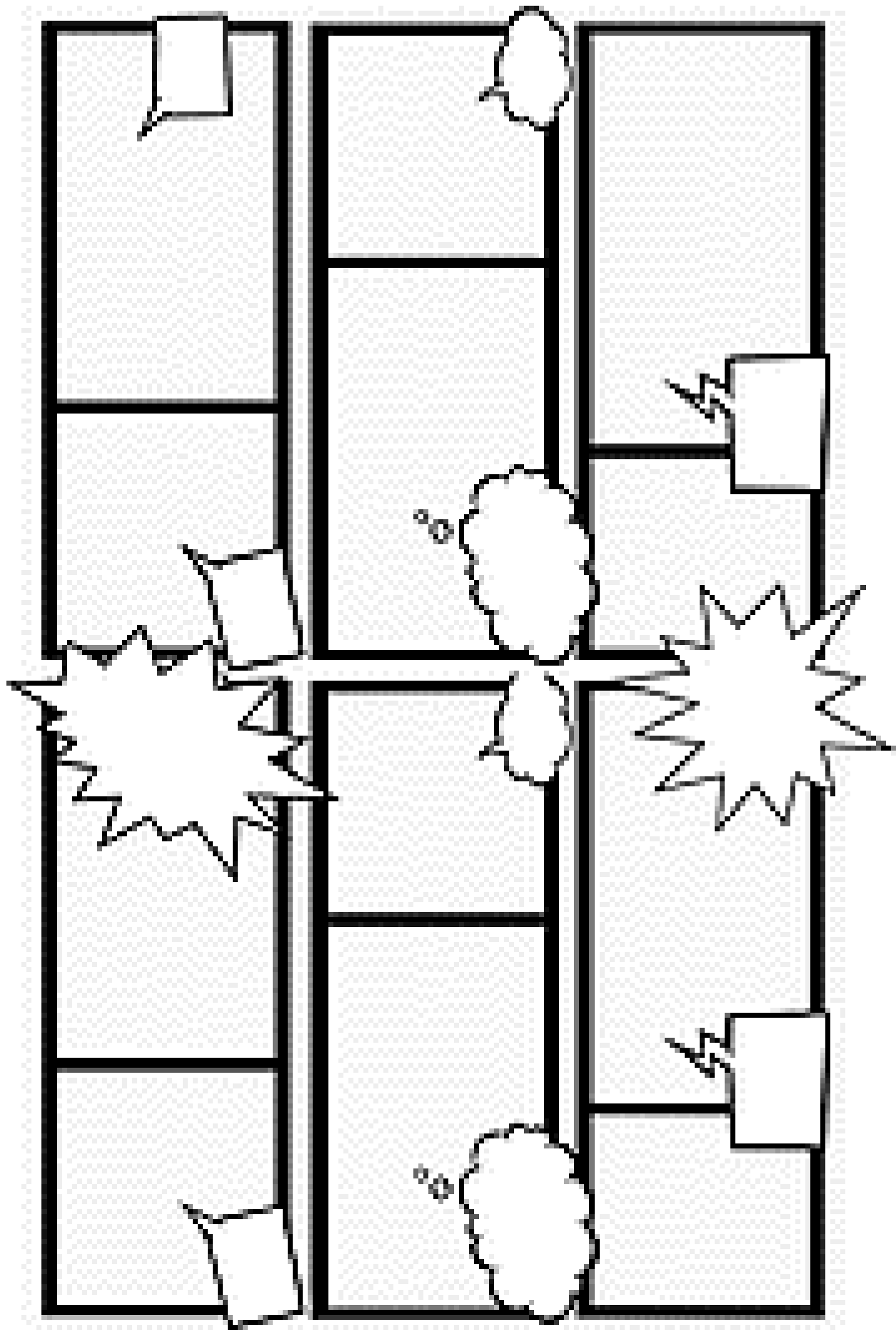


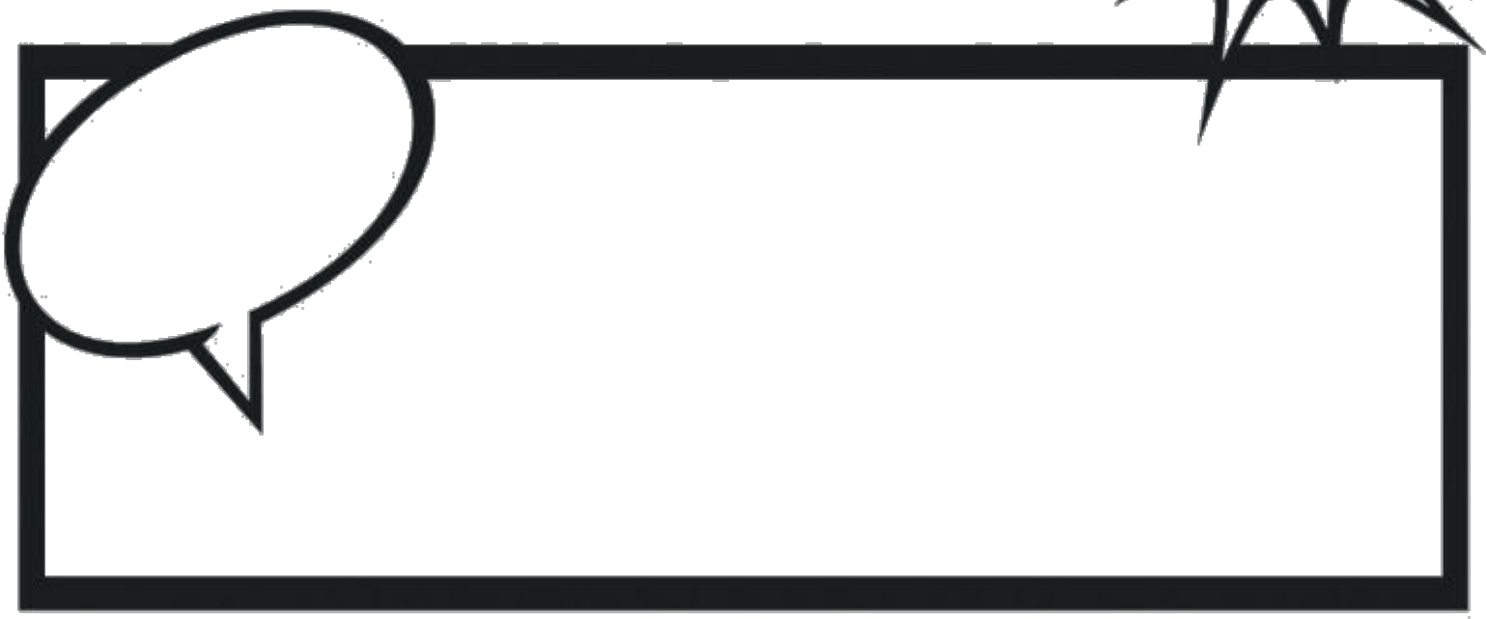


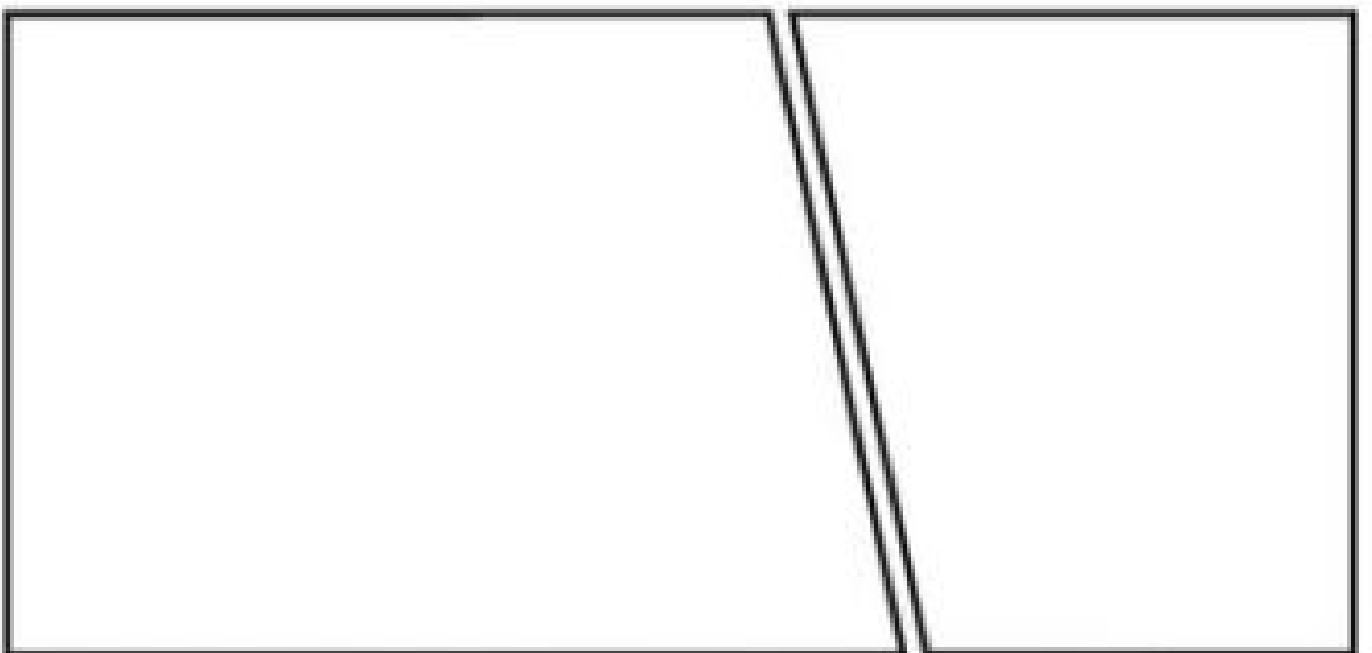
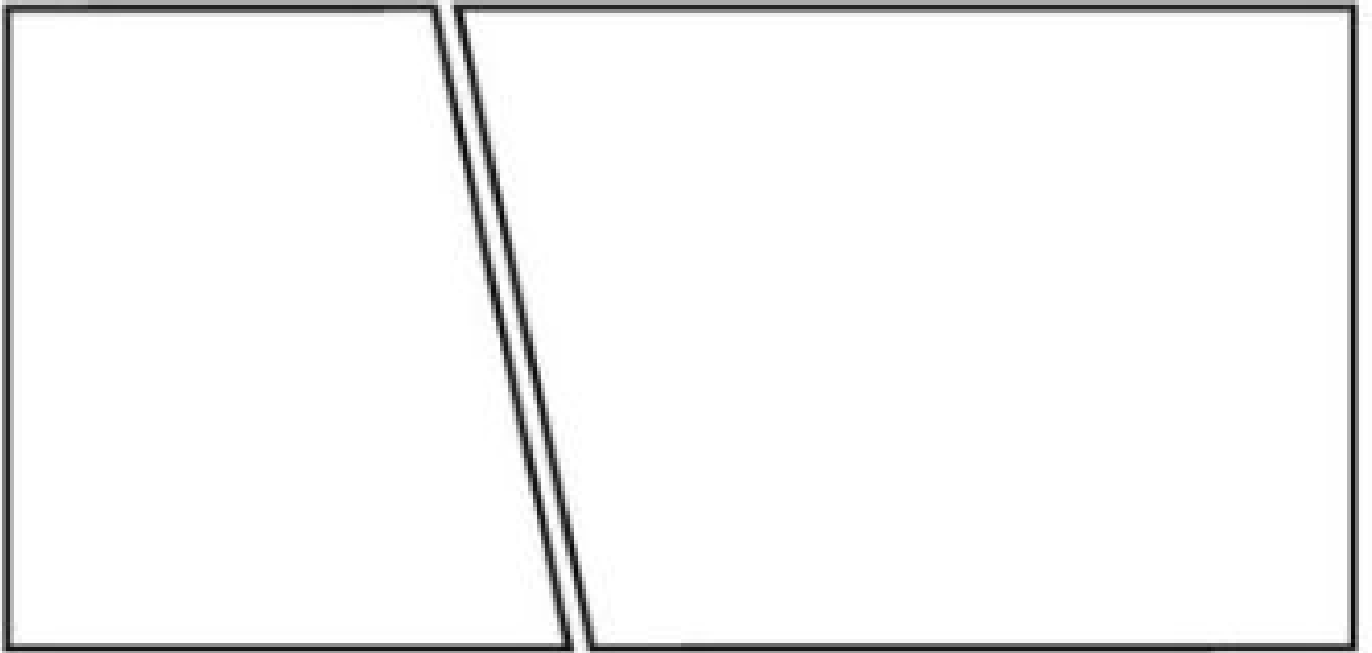












Flow Chart for Narrative Writing

Introduction

- The introduction grabs the reader's attention.
 - The setting for the story is described.
 - Some characters are introduced.
 - Give a hint of the problem to come.

Body of Work

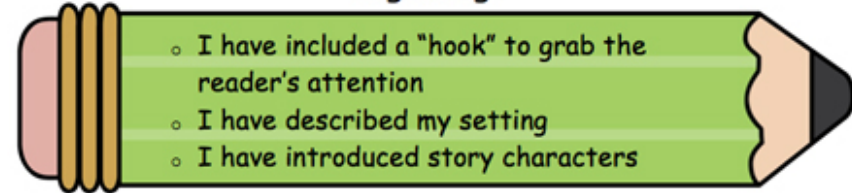
- Can be single or numerous paragraphs.
- Provide lots of details, adjectives, adverbs and action words.
 - The problem or excitement is outlined.
 - All characters are introduced and described.
 - Step(s) to resolve problem will be discussed.
 - Consider the sequence of events.

Ending

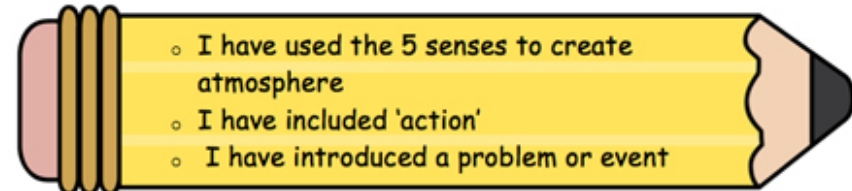
- Final resolution of the problem.
- The ending is effective; could be happy, startling, sad etc.
 - Provide a final thought or message.

Narrative Writing Checklist

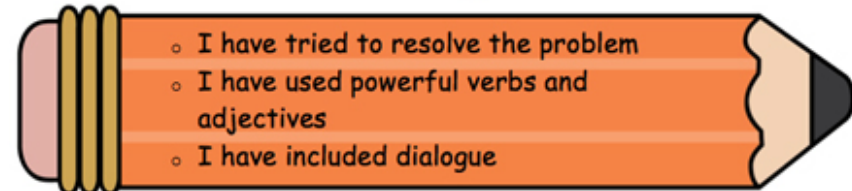
Beginning



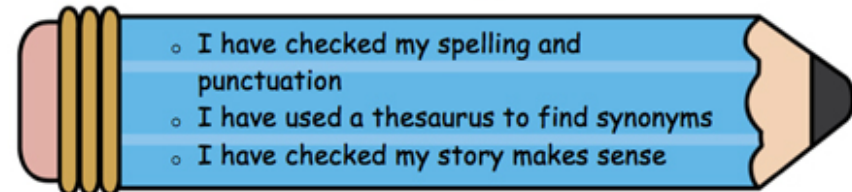
Middle



Ending



Editing



Recount

When do I use it?

To tell what happened or to retell events

Orientation

Tell who, what, when, where and why.

Sequence of Events

Present the events in time order. You may want to comment on the events as you write them.

Conclusion

Give your opinion about what has happened in your recount.

Use:

Action Verbs

- walked
- saw
- laughed
- acknowledged

Past Tense

- was
- went
- were

Quoted Speech

- The police officer yelled 'Stop!'

Reported Speech

- The police officer called to the thief to stop.

Conjunctions and Connectives

- when
- then
- first
- next

Noun Groups

- all the small dogs
- my shoes

Recount Connectives

At first...
Initially...
First...

Last week...
Last month...
Last year...

Meanwhile...
At the same time...
Moments later...

As we/I...
When we/I...
Having...
After...
Once we/I had...

Later...
Next...
After that...

Eventually...
In the end...
At last...

Information Report

When do I use it?

To present information about an object, animal, person or place

Classification

Introduce your topic.

Tell what the object or animal is, who the person is, or where the place is.

Description

Use paragraphs with topic sentences to organise the different bundles of information.

Object—size, shape and features, dynamics, where it is used or found

Person—characteristics, where he/she lives, what he/she does, achievements

Animal—appearance, behaviour, habitat, breeding

Place—size, facts, features

Conclusion

(Optional) You may want to make a personal comment about the subject of the report.

Use:

Timeless Present Tense

- Vultures circle their prey ...
- ... is a popular holiday destination

General Nouns

- ski resort
- rock musician
- mountain goat

Technical Terms

- Dolphins are mammals ...
- ... is an orthopaedic surgeon
- ... is situated on the San Andreas fault line

Relational Processes

- Jupiter is the largest planet in our solar system
- Unlike rabbits, the young fawns are born fully haired

WRITING ORGANIZER – Information Report

Introduction: *Definition or classification of the subject.*

May include a definition, classification or brief description.

Description: *- Important facts about the subject.*

- Facts about the subject, set out in paragraphs.







- Subheadings are often used. For example:

Animal	Person	Object	Place
Appearance	Name, Age	Appearance	Location
Habitat	Appearance	Parts	Climate
Movement	Personality	Functions	Geography
Food	Occupation	Features	Population
Behaviour	Achievements	Uses	Culture
Lifecycle	History	Values	History




- May include photos, pictures, maps or diagrams

Conclusion: *- Summary, question or comment (optional)*


Ways to help develop your child's thinking and talking skills



<h1>REMEMBER</h1> <p>Retrieve relevant knowledge from long-term memory.</p>  <ul style="list-style-type: none"> • Can you recall...? • Where is...? Who is...? • Can you list four...? • How would you describe...? • How could you explain...? • Which of these is true...? false...? <p>Showing Naming Listing Restating Finding Recognizing Choosing Matching Relating</p>	<h1>ANALYZE</h1> <p>Separate a whole into parts and determine their relationships.</p>  <ul style="list-style-type: none"> • Why do you think...? • What is the relationship...? • Can you compare...? contrast...? • What idea is relevant to...? • How would you categorize...? • What can you infer...? <p>Classifying Investigating Assessing Experimenting Yielding Discovering Simplifying Differentiating Researching</p>
<h1>UNDERSTAND</h1> <p>Construct meaning from instructional messages.</p>  <ul style="list-style-type: none"> • What is the main idea of...? • Can you find an example of...? • How would you summarize...? • What might happen next...? • How do you explain...? • What ideas or facts show...? <p>Organizing Discussing Interpreting Paraphrasing Extending Outlining Reviewing Inferring Showing</p>	<h1>EVALUATE</h1> <p>Make judgments based on criteria and standards.</p>  <ul style="list-style-type: none"> • Which is more important? • Is there a better solution to...? • Can you defend...? • What are the pros of...? cons...? • Why is... of value? • How would you feel if...? <p>Validating Debating Assessing Justifying Monitoring Prioritizing Critiquing Selecting Rating</p>
<h1>APPLY</h1> <p>Carry out or use a procedure in a given situation.</p>  <ul style="list-style-type: none"> • What would happen if...? • How could you clarify...? • Who do you think...? • Which approach would you...? • How would you use...? • What is a situation like...? <p>Practicing Choosing Planning Implementing Operating Developing Interviewing Solving Generalizing</p>	<h1>CREATE</h1> <p>Combine elements or ideas to form a new whole.</p>  <ul style="list-style-type: none"> • What is an alternative...? • Could you invent...? • Can you compose a...? • What is your theory about...? • How can you imagine...? • What could you design to...? <p>Building Combining Formulating Constructing Devising Improving Changing Adapting Producing</p>

English glossary Year 6 Unit 1



Key terms	Definition
adverb	An adverb is a word class that may modify (add a description to) a verb. For example, the word 'beautifully' in 'She sings beautifully '. In English, many adverbs have an -ly ending. 
antagonist	A person or character whose actions usually pose a problem for the main character ; this problem functions to provide an opportunity for the main character to develop or change.
character development	The manner in which a character develops or changes over the course of a narrative.
character traits	The qualities of a person or character involved in a story. For example, honest, hard-working.
characterisation	The process by which the writer reveals the personality (character traits) of a character and creates a recognisable identity. Characterisation can be direct (telling the reader what a character is like) or indirect (showing the reader through the use of techniques and strategies such as language features).
chronology	The order of past events. That is, arranging events based on when they occur in time. For example, timelines start from the earliest event to the latest.
clause	A grammatical unit that refers to a happening or state. It usually contains a subject and a verb group/phrase. For example: the dog ran after the ball. 
climax	The most intense or exciting part of a story, usually the moment of significant change for the main character and their dilemma (conflict); usually takes place during the complication and after the rising action , but it can occur in the orientation .
complex sentence	A sentence with one or more subordinate clauses. In the following example, the subordinating clause is indicated by square brackets. <i>I took my umbrella [because it was raining].</i> 
complication	A complication is a series of events that takes place after the orientation . The events include the rising action , climax and falling action . Each event in the complication advances the plot and increases tension and suspense for the reader.
conflict	Conflict is the struggle between two or more forces in a story. Conflict can be <i>internal</i> — in a character's mind — or <i>external</i> — between characters or between a character and other outside forces.



Key terms	Definition
cultural context	The culture in which the text was created. The cultural setting of a narrative can impact on the development of characters and the plot.
dialogue	Dialogue is the conversation (written or spoken) between two or more people. In narrative stories, dialogue is denoted by either single or double quotation marks such as “dialogue” or ‘dialogue’. Dialogue is also known as direct speech.
emphasis	A strategy authors use to achieve a purposeful effect, specifically to give importance to particular aspects of a story.
exaggeration	A strategy authors use to achieve a purposeful effect, specifically to overstate or distort the essence of a thing or person in an excessive manner.
falling action	A stage in plot structure that takes place during the complication . The falling action happens after the climax .
first person	A particular type of narrative point of view in which the reader knows the thoughts and feelings of the character who is telling the story.
historical context	The time in which a text was created or set.
infer	To infer is when a reader uses information in the text and combines it with their own knowledge. For example, to use what you are reading to work out why things are happening or why people behave the way they do.
language features	The features of language which support meaning. For example, sentence structure, noun group/phrase, vocabulary, punctuation, figurative language. The use of language features varies according to the purpose of the text, its subject matter, audience and mode and medium of production. 
main character	The person in a story who plays the main part and is opposed by an antagonist . Sometimes the main character is also called a protagonist .
metaphor	A literary device or strategy that is not meant to be taken literally. For example, ‘he had a heart of stone’ means he was not very caring. Also, to say that one thing <i>is</i> another (‘The warrior <i>is</i> a lion on the battlefield’).
mood	The feeling or atmosphere created by the language features and literary devices in a story or poem.
motivation	The reasons why people behave the way they do.

Key terms	Definition
narrative elements	All parts that make up a narrative text (for example, plot structure, language features, theme, setting, conflict, narrative point of view, and characterisation).
narrative point of view	The ways in which the narrator may be related to the story. For example, the narrator might take the role of first or third person or third person narrator's perspective.
noun	A noun is a word class that includes all words meaning physical objects such as 'man', 'woman', 'boy', 'girl', 'diamond', 'car', 'window', etc. A noun can be a name, place or thing. 
noun groups	Noun groups consist of a noun as the major element, alone or accompanied by one or more modifiers. For example: 'the car', 'the old man's house', 'a nice day', etc. 
orientation	A stage in plot structure. The beginning of a story that introduces important narrative elements. Often the elements involve characters and setting.
perspective	See narrative point of view .
plot	A series of events organised into the orientation, complication and resolution that builds tension in the story and maintains interest for the reader.
plot structure	Plot (or narrative) structure is the way the events are organised and sequenced in a story: orientation, complication, resolution .
plot tension	The build-up of complication in a narrative plot that the main character has to overcome. Plot tension , or suspense, maintains the interest of the audience.
protagonist	See main character .
purpose	A method of classifying texts and defining a relationship between an author, a text and an imagined reader (audience). The purpose of a text influences its characteristic features.
repetition	A strategy authors use to achieve a purposeful effect. Repetition gives emphasis to an aspect of text or character. See also language patterns (Australian curriculum glossary and content descriptors/elaborations)
resolution	The final stage of plot structure . It takes place after the orientation, complication, rising action , the climax and falling action . In the resolution, the original complication is fully resolved and the plot tension of the story evaporates. The resolution often gives a sense of an ending to a reader.



Key terms	Definition
rising action	A stage in plot structure that takes place after the orientation and during complication . Rising action is made up of the actions that lead up to the climax .
setting	The time in history and the place or geographical location where the story takes place.
social context	The social situation in which language is being used. For example, the text is set in a different society that has different ways of speaking and interacting.
strategies	The language choices or devices used by authors to achieve a purposeful effect, including exaggeration , repetition , emphasis , plot tension and suspense .
subordinate clause	A subordinate clause functions within the structure of another clause. It is also referred to as a dependent clause because on its own, it does not make sense.
subordinating conjunction	Conjunctions which introduce certain kinds of subordinate clauses. They include conjunctions such as 'after', 'when', 'because', 'if' and 'that'.
suspense	A feeling engendered in a reader which arises out of plot tension and the question: what will happen next?
theme	The main idea or message of a text.
third person	A particular type of narrative point of view in which the narrator of the story is not a character in it.
title	The name of a book, story or creative composition.
verb	A verb is a word class that describes a kind of situation such as a happening (for example, the word ' climbed ' in 'She climbed the ladder') or a state (for example, the word 'is' in 'The koala is an Australian mammal').  Verbs are essential to clauses (sentence) structure.
verb groups	Verb groups are made up of a main verb or a main verb that is modified by an auxiliary or modal verb. This means a description has been added to it. For example, verb groups/phrases: <ul style="list-style-type: none"> • create tense, as in 'He [was happy]', 'She [is working] at home', I [have seen] him before' • express modality using modal verbs such as 'can', 'may', 'must', 'will', 'shall', etc., as in 'You [must be] mad', 'He [will have arrived] by now', 'She [may know] them' • create passive voice, as in 'A photo [was taken]'. 

Character trait word list

Display this in your classroom to use throughout the unit.

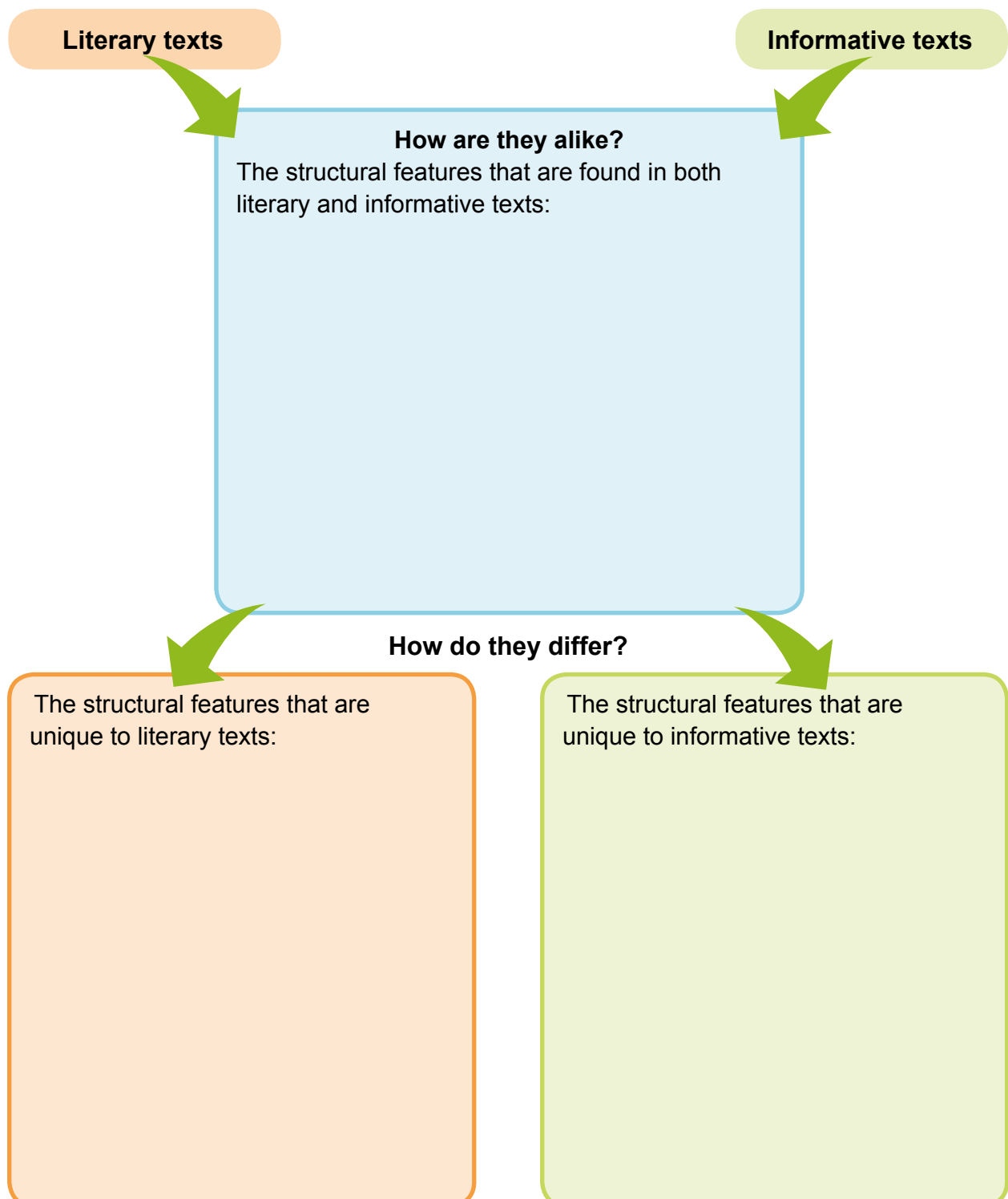
Character trait words		
adventurous	dishonest	loud
ambitious	eager	loving
angry	energetic	loyal
anxious	evil	mean
bold	excitable	messy
bossy	foolish	mischievous
brave	friendly	nasty
calm	frustrated	neat
carefree	fun loving	proud
caring	funny	quiet
charming	generous	responsible
clever	gentle	rude
compassionate	greedy	scared
confused	happy	selfish
considerate	hardworking	serious
courageous	helpful	shy
cowardly	honest	sneaky
creative	hopeful	stubborn
cruel	humble	thoughtful
cunning	imaginative	timid
curious	independent	uncertain
daring	intelligent	unselfish
demanding	inventive	vain
determined	keen	wild
disagreeable	lazy	wise

Similarities and differences

Write each of the following structural features of literary and informative texts in their correct place in the graphic organiser below.

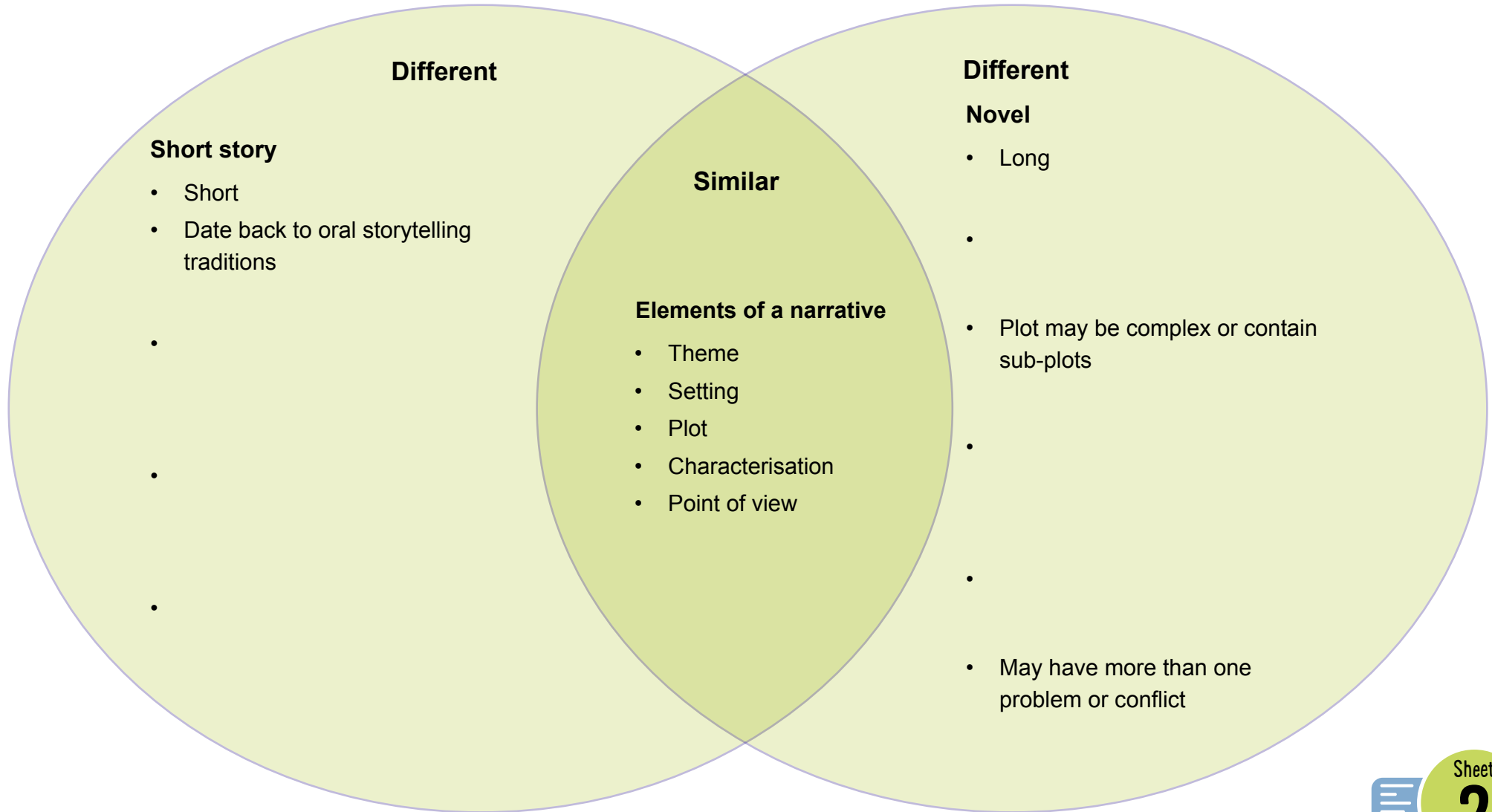
Structural features

- | | | | |
|------------------------------|--------------------|------------------|------------|
| • blog/email/contact details | • chapter headings | • chapters | • glossary |
| • headings/subheadings | • homepage | • contents/index | • menu bar |
| • further reading | • references | • search tool | • title |
| • hyperlinked words | • web pages | | |



Short stories and novels: Venn diagram

Add three more dot points about differences between short stories and novels.



Student name:



Story elements: plan your own story

Make notes in each box to suggest how you would use the following story elements in your own story to create humour.

Narrative elements	Notes for your story
Plot: List the key events.	
Orientation: When and where will your story be set?	
Complication: What will the problem be in the story?	
Climax: What will the most intense or exciting part be?	

Student name:

Narrative elements	Notes for your story
<p>Resolution: How will the problem be solved?</p>	
<p>Conflict: What will the struggle be in the story?</p>	
<p>Characters: List some characters for your story.</p>	
<p>Narrative point of view: Will you write in the first or third person?</p>	
<p>Verbs: List some expressive verbs you could use.</p>	

Student name:



Narrative elements	Notes for your story
Repetition: How might you use repetition in your story?	
Exaggeration: How might you use exaggeration in your story?	
Emphasis: How might you use emphasis in your story?	

How was your student able to complete the activity?

No assistance required Some assistance required A lot of assistance required Not able to do this task

Comments:

Student name:



Guided reading practice

Before reading

1. a. Read the title and skim through the story looking for any key words that will help you identify the main characters, the setting and what the story will be about.
- b. Write the title of the story here.

Remember to *skim* means to glance quickly over the words and look for key words and read some sentences.

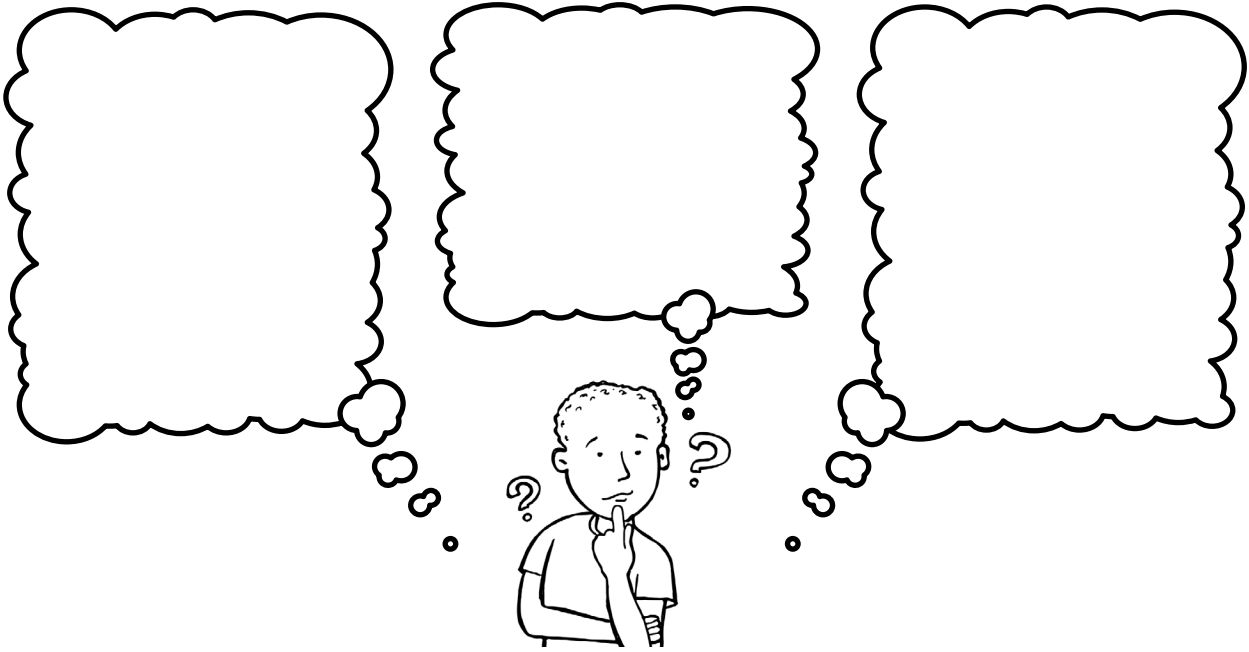
- c. Complete the table.

Who do you think will be the main characters?	Where do you think the story will take place?	What could the story be about?

2. Make connections between this story and your own experiences.

- a. What does the story remind you of?
- b. Is it similar to other stories that you have read?
- c. Have you ever been in a similar situation as the character in the story?

Write one similar situation in each thought bubble below.



3. Can you see any words you don't know? Write them in the box below and find their meaning before reading.

Student name:

During reading

4. Use the following plan to help analyse the story.

For example, ask yourself what connections you can make with your own experiences.

Make connections

Ask questions

Infer

Visualise

Clarify meaning

Predict

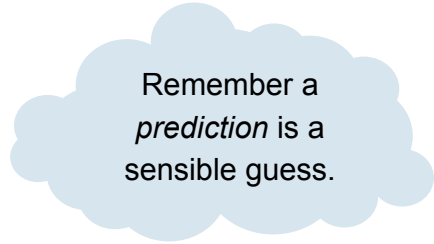
Student name:

After reading

Complete the following:

That was a really

It gave me a real picture of:



Remember a
prediction is a
sensible guess.

story.

Before I read the story I predicted that:

List any predictions you made that were correct.

What do you think was the message of the story?

Student name:



After reading this story, list any ideas below that could help you with your writing.

How was your student able to complete the activity?

- No assistance required Some assistance required A lot of assistance required Not able to do this task

Comments:

Air pollution

- Read the informative text on the right.
 - Identify the theme of this text.
-
- Write the technical language you might be able to use in your narrative.

The screenshot shows the website <http://www.aus-aircare.org.au>. The main navigation bar includes links for RADIO, TV, SHOP, NEWS, SPORT, LOCAL, ENVIRONMENT, and a SEARCH box. The site title is "AUSSIE AIR CARE PROJECT" with the tagline "caring for the air we breathe".

The "The Facts about Air Pollution" section contains the following text: "The late 20th Century has seen a significant increase in the prevalence of atmospheric pollutants and a worrying decrease in the quality of our air. Poor air quality can lead to a range of health complications including asthma, emphysema and heart disease."

The diagram titled "Causes of air pollution" shows three sources: Residential emissions, Industrial emissions, and Transport. Residential emissions are described as "Growing populations and sprawling urban developments have lead to radical increases in heavy particle pollutants." Industrial emissions are described as "Industrial emissions release pollutants such as lead & sulphur dioxide into the atmosphere." Transport is described as "Emissions released from forms of transport reliant on fossil fuels release pollutants such as carbon monoxide into the atmosphere."

The "How to help" section provides the following advice: "There are many ways ordinary Australians can work towards decreasing the output of harmful pollutants into our atmosphere."

- Reduce the impact of residential emissions by avoiding use or aerosols and wood-burning fires caused by activities such as back-burning.
- Reduce the impact of transport emissions by riding a bicycle or using public transport.
- Try to avoid using products and services produced by industries which do not have greenhouse emission reduction schemes in place. See a list of environmentally friendly companies [here](#).

 Click on the **Take Action** link on the menu bar for more information."

Student name:

d. Which ideas can you take from this informative text and transform for use in a narrative?

Complete the table below by writing ideas of how this informative text could be transformed into a narrative. Use the **Video — Ideas: The transformation of an informative text to a narrative** as a model.

setting

characters

complication

Student name:

resolution

e. Write your story on the next page and refine your ideas by adding some of the following strategies:

- evaluative language
- expressive verbs
- adverbs
- emphasis
- repetition
- technical vocabulary from informative text
- figurative language.

Now you have your ideas organised, use your writing skills to change some of the language features.

Remember, you can have another look at how the ecowarriors wrote their story if you get stuck.



Student name:



f. Re-read your story and ensure that you have the same or a similar theme as you identified in task b.

Student name:


Comments:

How was your student able to complete the activity?

- No assistance required A lot of assistance required
 Some assistance required Not able to do this task

Terms

Cut out the cards on the sheet to use in a game of concentration. You will also need to use the cards on **Sheet 10** to play.



Hot tip


To play concentration, place the 'term' cards face down on the left-hand side of a flat surface and then place the 'definition' cards face down on the right. Turn one card over on each side. If you get a match, place the cards off to the side. If not, turn them over and try again. When you have matched all of the cards, you have finished.



Main character	Conflict	Setting
Narrative point of view	Theme	Purpose
Character traits	Orientation	Complication
Resolution	Rising action	Climax
Falling action		

Definitions

Cut out the cards on the sheet to use in a game of concentration. You will also need to use the cards on **Sheet 9** to play.



Hot tip

To play concentration, place the 'term' cards face down on the left-hand side of a flat surface and then place the 'definition' cards face down on the right. Turn one of each card over. If you get a match, place the cards off to the side. If not, turn them over and try again. When you have matched all of the cards, you have finished.



<p>Usually the central character or the protagonist</p>	<p>A struggle between two forces: external (the main character and something external) or internal (a struggle with his or her ideas, morals, choices)</p>	<p>The place and time where the story takes place</p>
<p>The person who tells the story. It can be in the first person (I, me, we, our) or third person (the story is written by another character or narrator).</p>	<p>The message or what the writer wants the reader to think about when they read the story</p>	<p>Why an author wrote the story (for example: to entertain, to teach a lesson, to warn)</p>
<p>Features of personality. They include many different qualities such as being adventurous, ambitious, angry or anxious.</p>	<p>Provides information for the reader about setting and characters and establishes the mood. It is usually at the beginning of a story.</p>	<p>Conflict or conflicts that lead to the climax. A problem that happens that requires the main character to respond.</p>
<p>The answer to the problem. Describes how and why the complication is solved</p>	<p>The sequence of events that occurs before the climax. Each event increases the tension and suspense and advances the plot.</p>	<p>The most intense or exciting part</p>
<p>The sequence of events that occurs after the climax</p>		

Numeracy

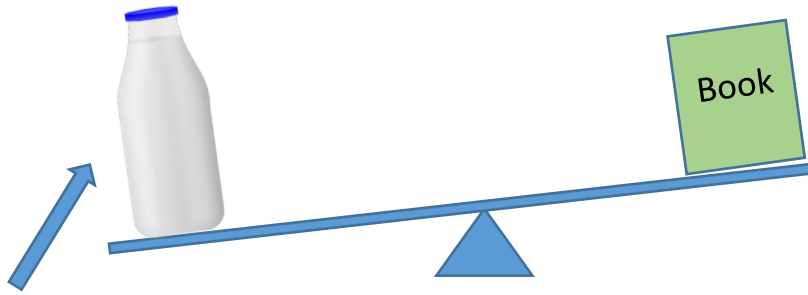
The Mathematics activities in this book support the Australian Curriculum and are targeted towards your child's year level.

How can I support my child?

Encourage them to repeat and practice their maths activities. Go through their work with them.

Think about ways that you can bring maths into real life experiences. This can be done by putting socks in pairs, setting tables, gardening, cooking and games. Count with your child, add things up, look at patterns. For example, look at the patterns in an artwork, count natural things such as shells, leaves or animals. Put different kinds of natural things into groups. Order objects by size. For example, collect rocks or bush tucker and put them into order from small to big.

Make a scale to that can find things that weigh 1 Kilogram.

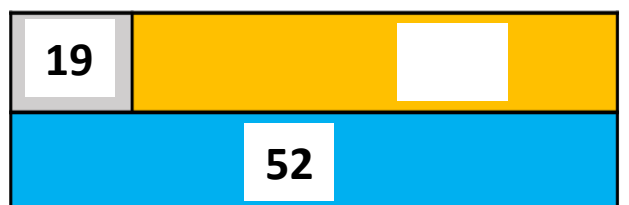
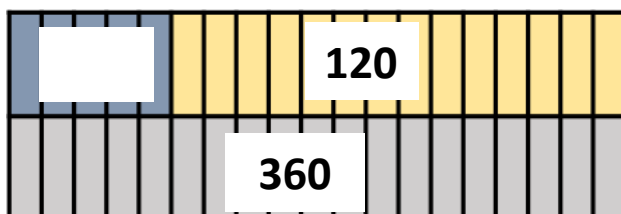
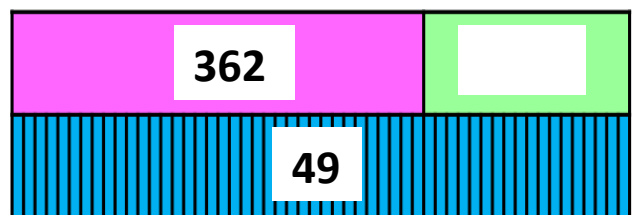
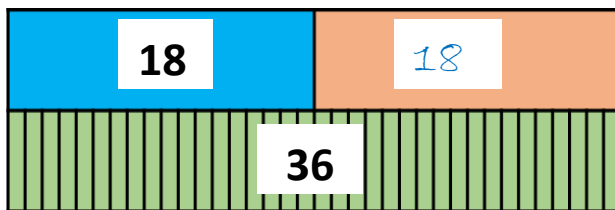


One litre of water is 1 kilogram

Record if things are heavier or lighter than 1 kilogram

Item	Lighter	Heavier
Book	x	

Numbers Bars to 1000

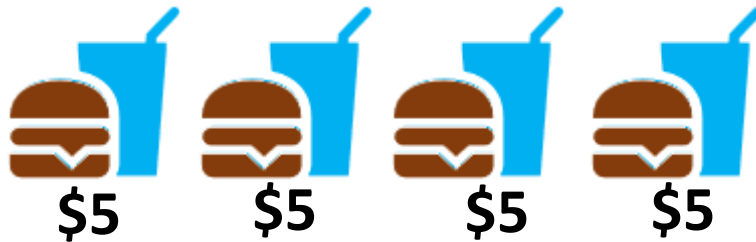


Make your own number bars

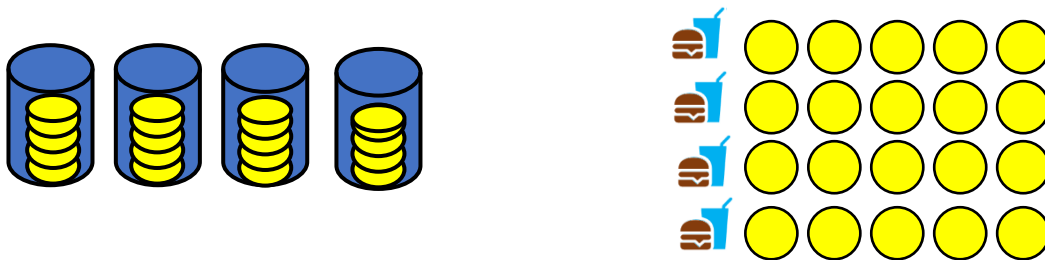
Multiplication Stories

Tell a multiplication story with words or pictures.

An example would be 4 friends bought a hamburger and drink for \$5.00 each.



Tell the same story with **cups/tins** and **seeds or lids**



Tell the story with **numbers and symbols**

$$4 \times \$5 = \$20$$

Other Ideas

- Draw a new picture and change the price or the number of items
- Stories about collecting, eating, drinking, shopping, cooking, games, sports and play

Comparing measurements

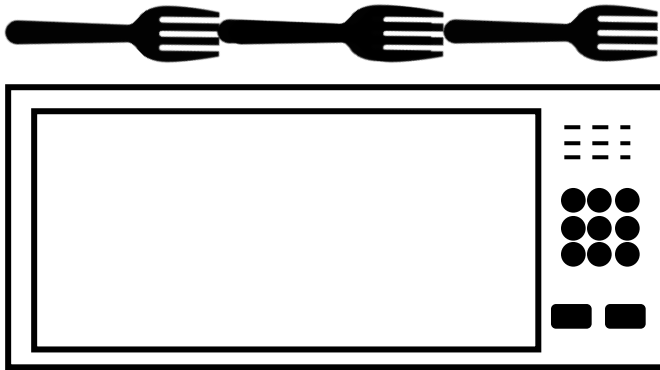
1. Find someone or something **half** your height.



2. Find someone or something **double** your height.



3. Find something **3 times as long** as a fork.



4. Make a collection of 5 objects then make another collection **double** the size.

5. Record the comparison with numbers and symbols

$$10 = 2 \times 5$$

Other Ideas

- Use your arm, leg or finger instead of your height
- Use other objects to help make comparisons
- Find things twice as long, 4 times as long, 5 times as long

Make a clock that can measure 1 minute.

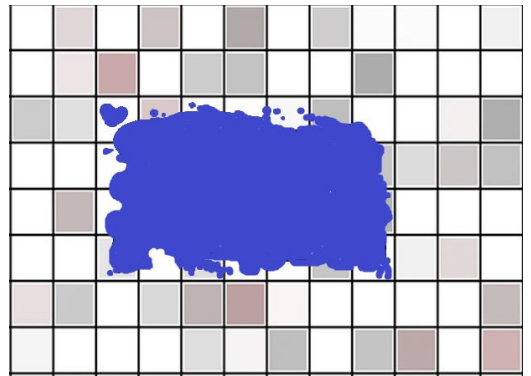
The clock in the picture is alright but there are ways to make a more accurate clock.



Calculate how many tiles are covered in paint

How many ways could you solve this problem?

Can you find tiles or pavers and create your own problems?



What's Happening

Pick a number	X 2	X 4
5	10	20
6	12	24

Pick a number	X 5	÷ 2
10	50	5
4	20	2

Look for some patterns in your answers. Describe what is happening.

Multiplication Stories

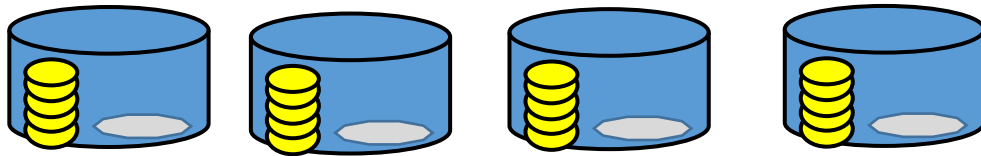
Tell a story with words and pictures

For example: Four friends bought a book and pencil for \$5.50 each.

Together they spent \$22.00.



Tell the story with cups/tins and coins



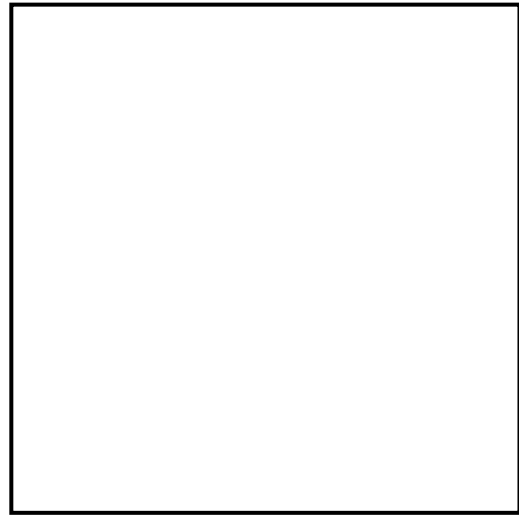
Tell the story with numbers and symbols

$$4 \times \$5.50 = \$22.00$$

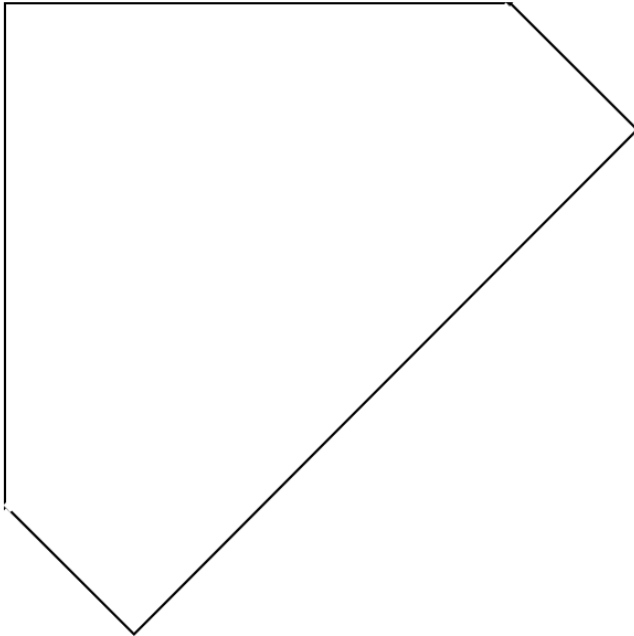
Other Ideas

- Draw a new picture and change the price or the number of items
- Stories about collecting, eating, drinking, meeting, shopping, cooking, games, sports and play
- Use different objects such as boxes, bottles, lids, shells, stones, sticks, pencil drawings, fruit, vegetables, pegs, chairs, plates, tins

Copy the pattern



Draw the coloured shapes inside the big shape



How many blue triangles could fit in the big square?

How many yellow squares could fit in the big square?

How many blue triangles could fit in the red triangle?

How many times can the green triangle fit in the big square?

How many orange parallelograms could be cut up and used to cover the big square?

Other Ideas

- Cut the coloured shape and try to fit the parts inside both drawings.

Peter keeps a piece of string from a parcel that came for his birthday.
It is 30 cm long.

He plays with it and makes different shapes.

He thinks that all the rectangles he makes have the same area.

His sister Miri disagrees.

Who is right and why?



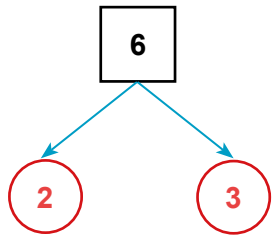
The local supermarket creates a display of cans in the shape of a triangle.
The top four rows are shown below.



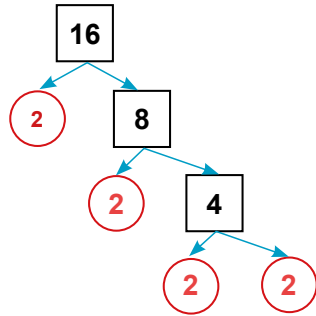
1. If the stack has 10 rows, how many cans are on display?
2. What if the display is 21 rows high?
3. Find a rule for finding the number of cans for any number of rows.

Factor trees

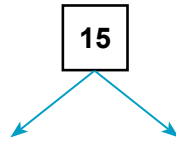
1. Finish the factor trees.
2. Prove your tree is correct each time by multiplying the set of prime factors. The first two are done for you.



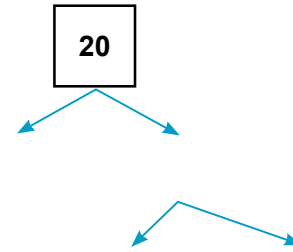
$2 \times 3 = 6$



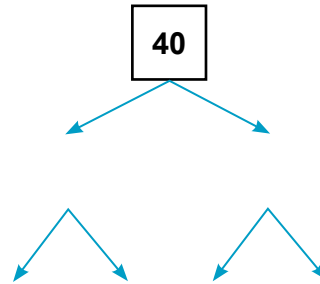
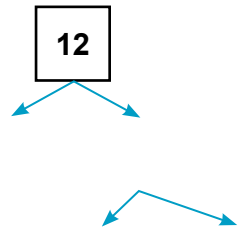
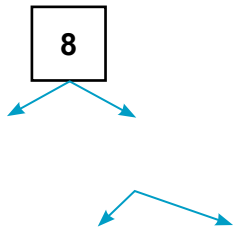
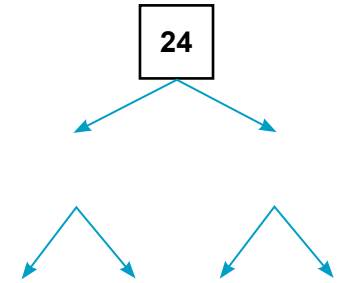
$2 \times 2 \times 2 \times 2 = 16$



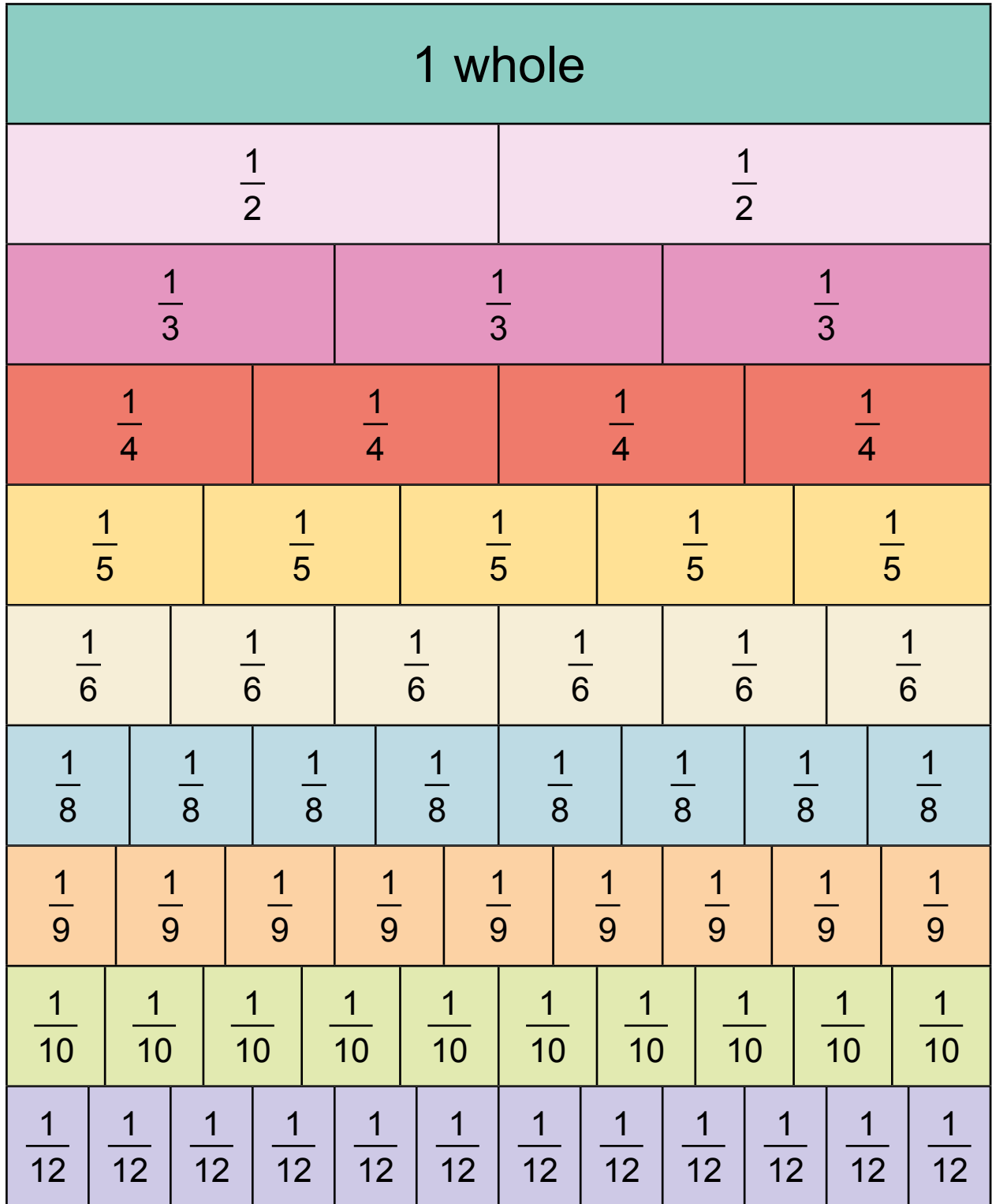
$\times = 15$



$\times \times = 20$



Fraction wall

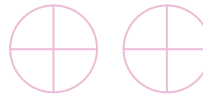


Add and subtract fractions: Same denominator

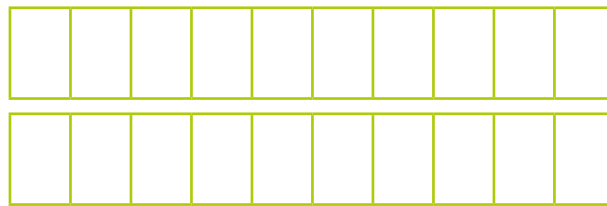
1. Shade the shapes to show both fractions, then complete the addition.



$$\frac{3}{8} + \frac{2}{8} = \text{---}$$



$$\frac{1}{4} + \frac{2}{4} = \text{---}$$



$$\frac{12}{10} + \frac{4}{10} = \text{---}$$

2. Shade the shapes to show the first fraction, then cross out the fraction that is subtracted. Complete the subtraction.



$$\frac{7}{8} - \frac{2}{8} = \text{---}$$



$$\frac{7}{5} - \frac{4}{5} = \text{---}$$



$$2\frac{8}{10} - 1\frac{5}{10} = \text{---}$$

How was your student able to complete the activity?

No assistance required

Some assistance

A lot of assistance

Not able to do this task

Comments:

Add and subtract fractions: Related denominators

1. Solve each problem. Draw a diagram to show your working out.

Students were asked to colour $\frac{2}{8}$ of a circle red and $\frac{2}{4}$ blue. How much of the circle was coloured altogether?

2. Find a common denominator, then complete the operation.

$$\frac{1}{3} + \frac{2}{6} = \frac{\quad}{6} + \frac{2}{6}$$

$$= \frac{\quad}{\quad}$$

$$\frac{9}{10} - \frac{2}{5} = \frac{\quad}{\quad} - \frac{\quad}{\quad}$$

$$= \frac{\quad}{\quad}$$

$$\frac{2}{8} + \frac{1}{4} = \frac{\quad}{\quad} + \frac{\quad}{\quad}$$

$$= \frac{\quad}{\quad}$$

$$\frac{3}{4} - \frac{1}{8} = \frac{\quad}{\quad} - \frac{\quad}{\quad}$$

$$= \frac{\quad}{\quad}$$

$$\frac{1}{5} + \frac{1}{10} = \frac{\quad}{\quad} + \frac{\quad}{\quad}$$

$$= \frac{\quad}{\quad}$$

$$\frac{2}{3} - \frac{1}{9} = \frac{\quad}{\quad} - \frac{\quad}{\quad}$$

$$= \frac{\quad}{\quad}$$

3.

The water tank was $\frac{4}{5}$ full. The gardener used $\frac{1}{10}$ of that water in the garden. How much was left in the tank?

4.

$\frac{3}{5}$ of the students in one class had brown hair and $\frac{3}{10}$ had black hair. What fraction had neither brown nor black hair?

How was your student able to complete the activity?

No assistance required

Some assistance





A lot of assistance

Not able to do this task

Comments:

Calculate probability

Find the probability of the following events by completing the table. The first event has been completed as an example.

Event	Possible outcomes (Circle the favourable outcome)	Probability of favourable outcome occurring	Write the probability as a decimal	Mark the probability on a number line
Throwing a 5 on a six-sided dice	1, 2, 3, 4, 5, 6	$\frac{1}{6}$	0.167	
Tossing heads when one coin is tossed	Heads/Tails	—		
Drawing a heart card when one card is drawn from a deck	Heart, Club, Spade, Diamond	—		
Spinning red on a spinner with five equal sections where one section is red	1, 2, 3, 4, 5	—		

Student name:

Comments:

How was your student able to complete the activity?

- No assistance required A lot of assistance
 Some assistance Not able to do this task

Chance experiments

Find the probability then collect experimental data about two of the chance experiments listed below.

For each event:

- list the favourable outcomes
- list the total number of possible outcomes
- find the probability of the event occurring
- carry out the experiment and record the results in a frequency table
- calculate the relative frequency as a decimal and a fraction
- compare the results with the probability.

The relative frequency is calculated by dividing the number of times an event occurs by the number of trials. For example:

Toss a coin	Count	Relative frequency
Heads	86	$86 \div 200 = 0.43$
Tails	114	$114 \div 200 = 0.57$
Total	200	

Experiment 1: Cubes in a bag

Resources:

Opaque bag

Four white and two black cubes (or similar objects in two different colours)

Event:

Draw one black cube from the bag.

Conduct 50 trials. Return the cube to the bag each time and shake the bag to mix the colours.

Experiment 2: Letters in a hat

Resources:

12 cards (three marked with vowels and nine marked with consonants)

Event:

Draw a vowel from the hat.

Conduct 20 trials. Return the card to the hat and mix the letters around after each draw.



Student name:

Experiment 3: Pick a card, any card

Resources:

Deck of cards

Event:

Draw a red card worth six or less from a full deck.

Conduct 50 trials. Return the drawn card and shuffle the cards after each draw.

Experiment 1

Student name:



Experiment 2

Experiment 3

How was your student able to complete the activity?

No assistance required

Some assistance

A lot of assistance

Not able to do this task

Comments:

What I know about multiples

No calculators are to be used for this activity.

Complete the table below by identifying at least two properties for each number. Explain your answers.

Multiple	Properties	How I know
25	Multiple of 5 Square number	25 ends in a 5, therefore is divisible by 5. $5 \times 5 = 25$ A number multiplied by itself is a square number.
45		
225		
296		
495		

Money operations

1. Estimate an answer. Use a written algorithm to find the answer (show your working).
 Use estimation to check each answer for reasonableness.

a. $\$34.85 + \12.15

Estimation

Algorithm

b. $\$56.25 - \23.05

Estimation

Algorithm

c. $\$250 - \120.50

Estimation

Algorithm

d. $\$34.20 + \$56.75 + \$40.95$

Estimation

Algorithm

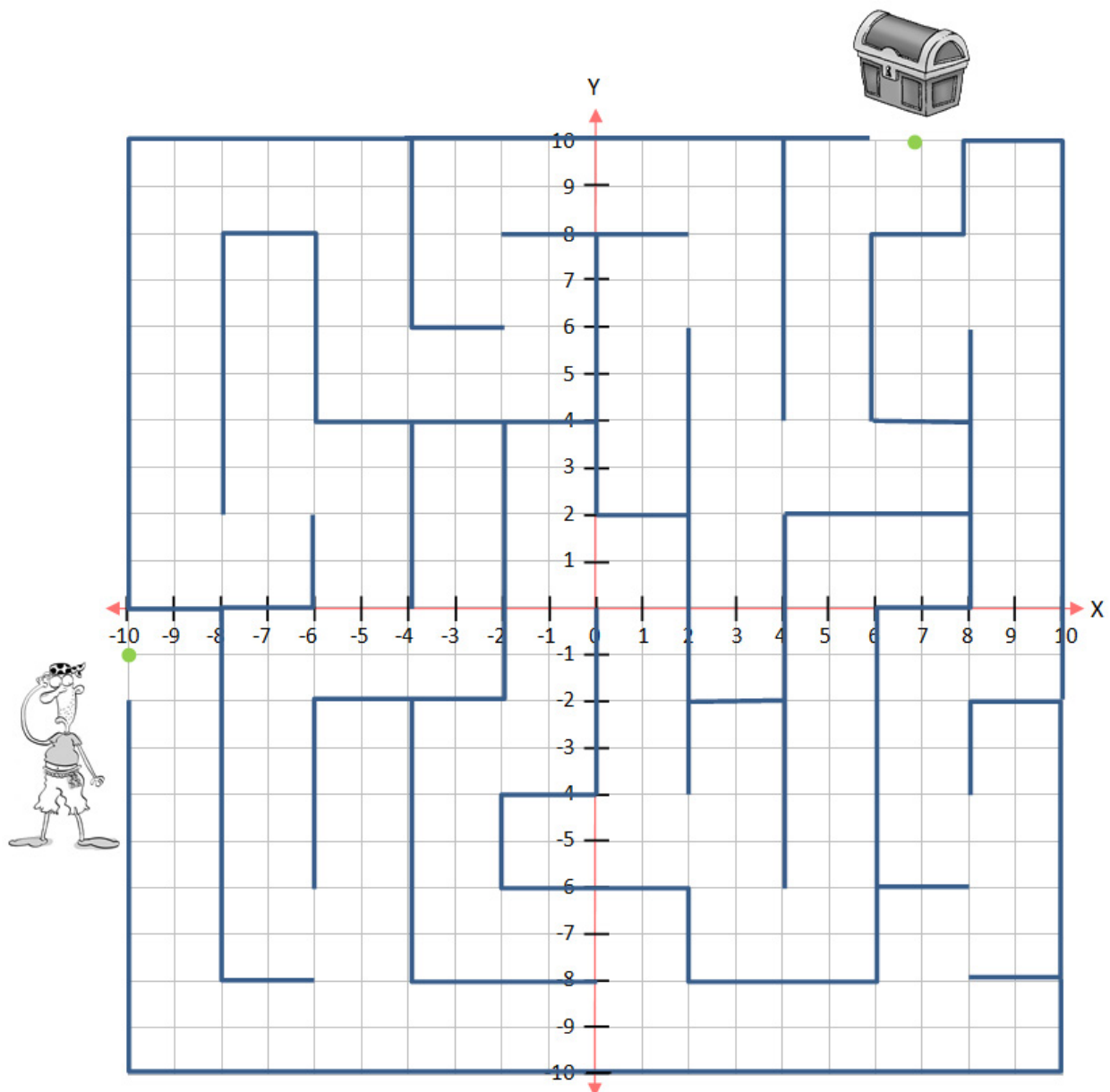
Treasure hunt

Challenge 1: Help the pirate find the treasure by finding a way through the maze. Choose whether you wish to solve the easy or difficult version of this hunt.

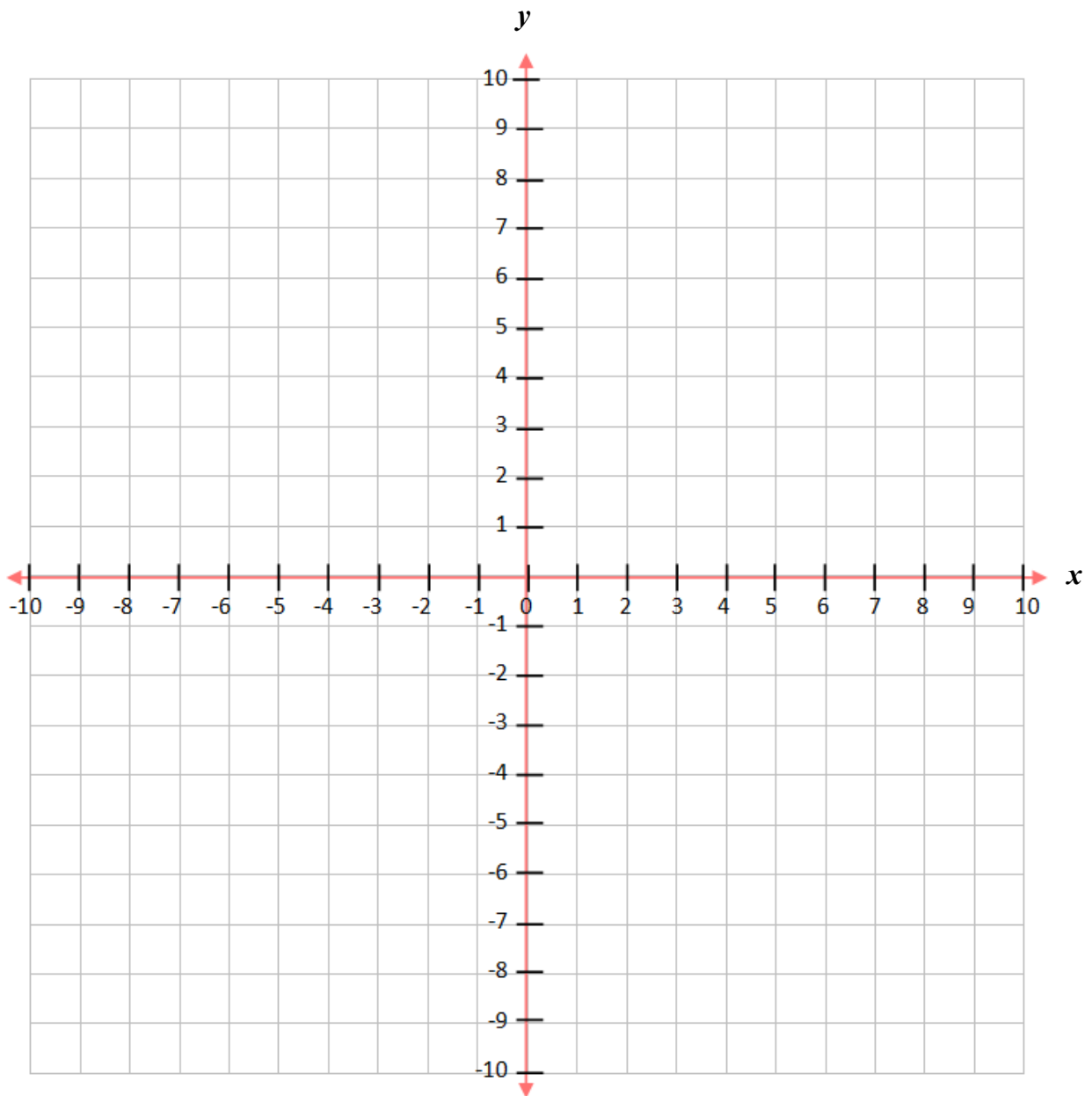
Easy: Draw a line through the maze. Then write the coordinates of each point where he changes direction.

Difficult: Write the coordinates where the pirate must change direction first. Then draw the path to the treasure by joining the dots.

The first two points are written for you: $(-10, -1)$, $(-9, -1)$



Challenge 2: Draw a maze on the grid below and challenge a friend.

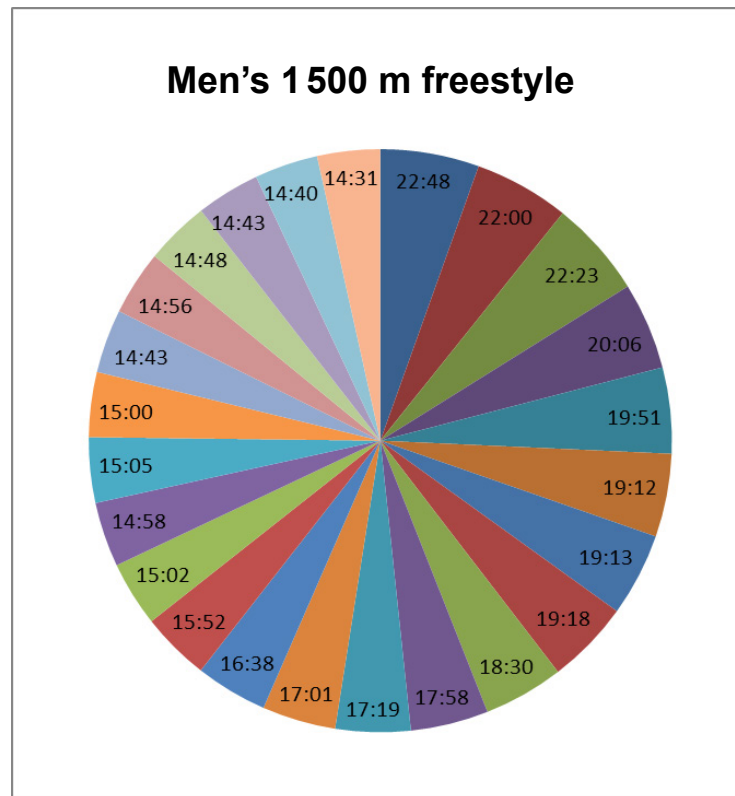


Graph types

Look at the following graphs that display information about the winning times in the men's 1500 m freestyle event. The data is from the Olympic Games database and the time span covered is from 1908 to 2008. All four graphs display the same data.

1. Graph 1

Pie chart



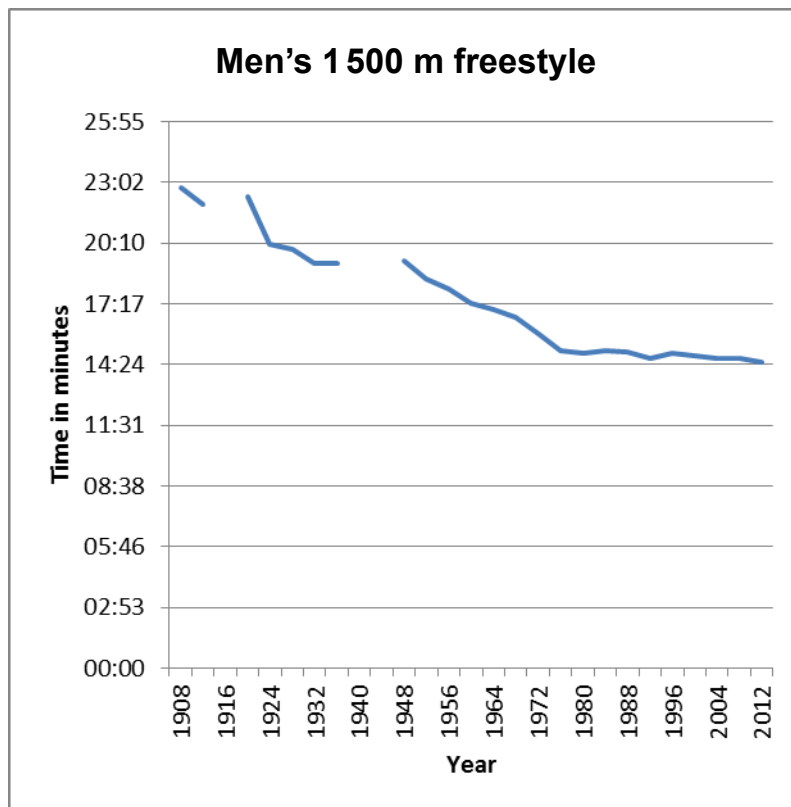
Data sourced from: [databaseOlympics.com](http://www.databaseolympics.com) © 2002–2011 (databaseSports.com)
<http://www.databaseolympics.com/sport/sportlist.htm>

- What are the advantages of displaying the data in a pie chart?
- What are the disadvantages of displaying the data in a pie chart?

c. Is the pie chart easy to read? Why?

2. Graph 2

Line graph



Data sourced from: databaseOlympics.com © 2002–2011 (databaseSports.com)
http://www.databaseolympics.com/sport/sportlist.htm

a. What are the advantages of displaying the data in a line graph?

b. What are the disadvantages of displaying the data in a line graph?

Student name:



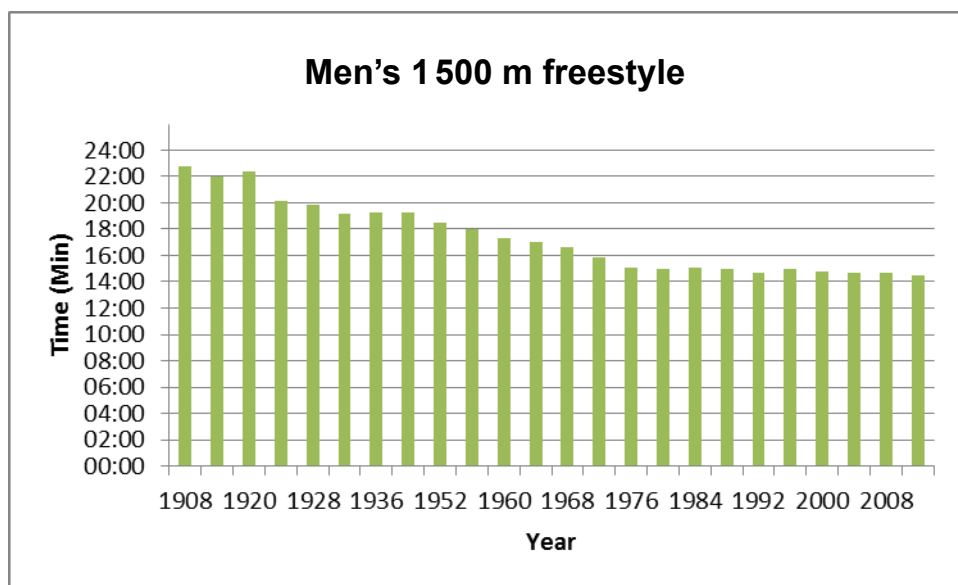
Sheet

1

- c. Why do you think there is information missing from some years?

3. Graph 3

Column graph



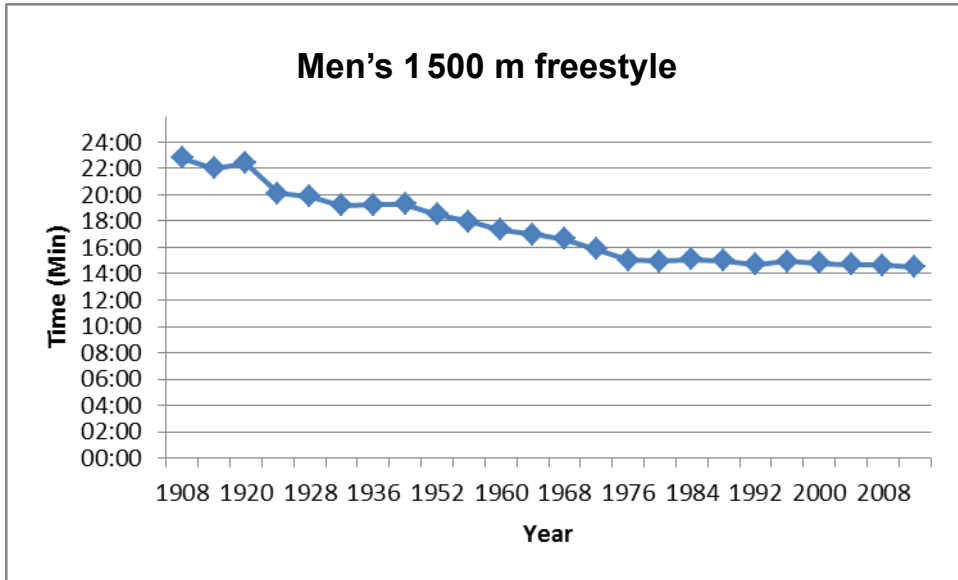
Data sourced from: databaseOlympics.com © 2002–2011 (databaseSports.com) <http://www.databaseolympics.com/sport/sportlist.htm>

- a. What are the advantages of displaying the data in a column graph?

- b. What are the disadvantages of displaying the data in a column graph?

4. Graph 4

Line graph with markers



Data sourced from: databaseOlympics.com © 2002–2011 (databaseSports.com) <http://www.databaseolympics.com/sport/sportlist.htm>

a. What do you notice about the representations in the line graph with markers?

b. Is this line graph with markers easy to read?

Student name:



Sheet

1

5. Which of the four graphs do you think best displays the information about the winning times in the men's 1 500 m freestyle event in Olympic swimming from 1908 to 2008?

6. Why did you choose this type of graph?

How was your student able to complete the activity?

No assistance required Some assistance required A lot of assistance required Not able to do this task

Comments:

Student name:



Dandy decimals

1. Calculate the following:

$$\begin{array}{r} 6.700 \\ + 1.222 \\ \hline \end{array}$$

$$\begin{array}{r} 6.845 \\ + 2.032 \\ \hline \end{array}$$

$$\begin{array}{r} 61.480 \\ + 5.144 \\ \hline \end{array}$$

$$\begin{array}{r} 4.469 \\ + 45.314 \\ \hline \end{array}$$

$$\begin{array}{r} 8.780 \\ + 4.146 \\ \hline \end{array}$$

$$\begin{array}{r} 1.557 \\ - 0.422 \\ \hline \end{array}$$

$$\begin{array}{r} 68.068 \\ - 6.040 \\ \hline \end{array}$$

$$\begin{array}{r} 27.625 \\ - 5.144 \\ \hline \end{array}$$

$$\begin{array}{r} 0.592 \\ - 0.173 \\ \hline \end{array}$$

$$\begin{array}{r} 62.507 \\ - 4.316 \\ \hline \end{array}$$

$$\begin{array}{r} 2.865 \\ + 1.316 \\ \hline \end{array}$$

$$\begin{array}{r} 35.080 \\ + 6.143 \\ \hline \end{array}$$

$$\begin{array}{r} 0.946 \\ + 0.327 \\ \hline \end{array}$$

$$\begin{array}{r} 7.329 \\ + 5.585 \\ \hline \end{array}$$

$$\begin{array}{r} 5.768 \\ + 28.577 \\ \hline \end{array}$$

$$\begin{array}{r} 54.930 \\ - 6.218 \\ \hline \end{array}$$

$$\begin{array}{r} 16.852 \\ - 0.393 \\ \hline \end{array}$$

$$\begin{array}{r} 24.446 \\ - 6.573 \\ \hline \end{array}$$

$$\begin{array}{r} 22.395 \\ - 2.859 \\ \hline \end{array}$$

$$\begin{array}{r} 7.500 \\ - 5.517 \\ \hline \end{array}$$

2. Solve the following word problems.

- a. Mum and Dad had to pay bills of \$24.59 and \$419.45. How much did they pay altogether?



Student name:

- b. The carry-on luggage limit is 7.7 kg. If Timmy's carry-on weighs 9.86 kg, how much was he over the limit?
- c. What is the perimeter of a triangle with sides of 13.21 cm, 15.43 cm and 26.64 cm?
- d. It took the first-place runner 28.785 seconds to run the race. The second-place runner took 30.945 seconds. How much faster was the first-place runner?

How was your student able to complete the activity?

- No assistance required Some assistance required A lot of assistance required Not able to do this task

Comments:

Wellbeing

We want our children to grow up healthy happy and strong. This means having the chance to run free and explore the country around them. It can include traditional ways of preventing sickness and staying healthy. We encourage children to watch out for each other and keep each other safe, to eat healthy food and keep themselves clean.

The wellbeing activities in this book will help students to develop their social and emotional skills, understandings and capabilities. The topic in this book helps students to understand their personal strengths.

Why learn about personal strengths?

Character strengths are important for thinking, feeling, and behaving. Working on personal strengths helps a person and others around them.

Students learn about personal strengths so they can:

- Learn and practice using words about strengths and positive qualities. This helps them to recognise and understand strengths and positive qualities in themselves and others
- Discuss personal, social and ethical challenges. This supports them to deal positively with challenges in their own lives and in the lives of people around them.
- Promote their own wellbeing and positive behaviour.

These are the underlying principles of the strength-based approach:

- All children have strengths and abilities
- Children grow and develop from their strengths and abilities
- The problem is the problem—the child is not the problem
- When children and those around them appreciate and understand the child's strengths, then the child is better able to learn and develop.

These 5 lessons should take about 30 mins and should only be done once per week.

2020

Year Six

Module 2: Personal Strengths
Student Activity Book

Student: _____



NT Schools of the Air

NT DEPARTMENT OF EDUCATION

Getting Along

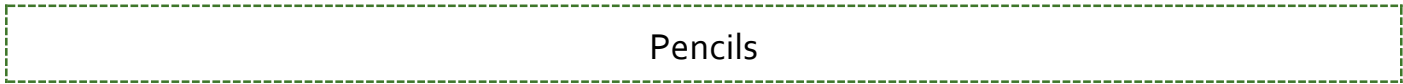
Activity One

Success Criteria



- I described what helps me to get along with others
- I described how I am responsible for helping everyone to get along

Equipment



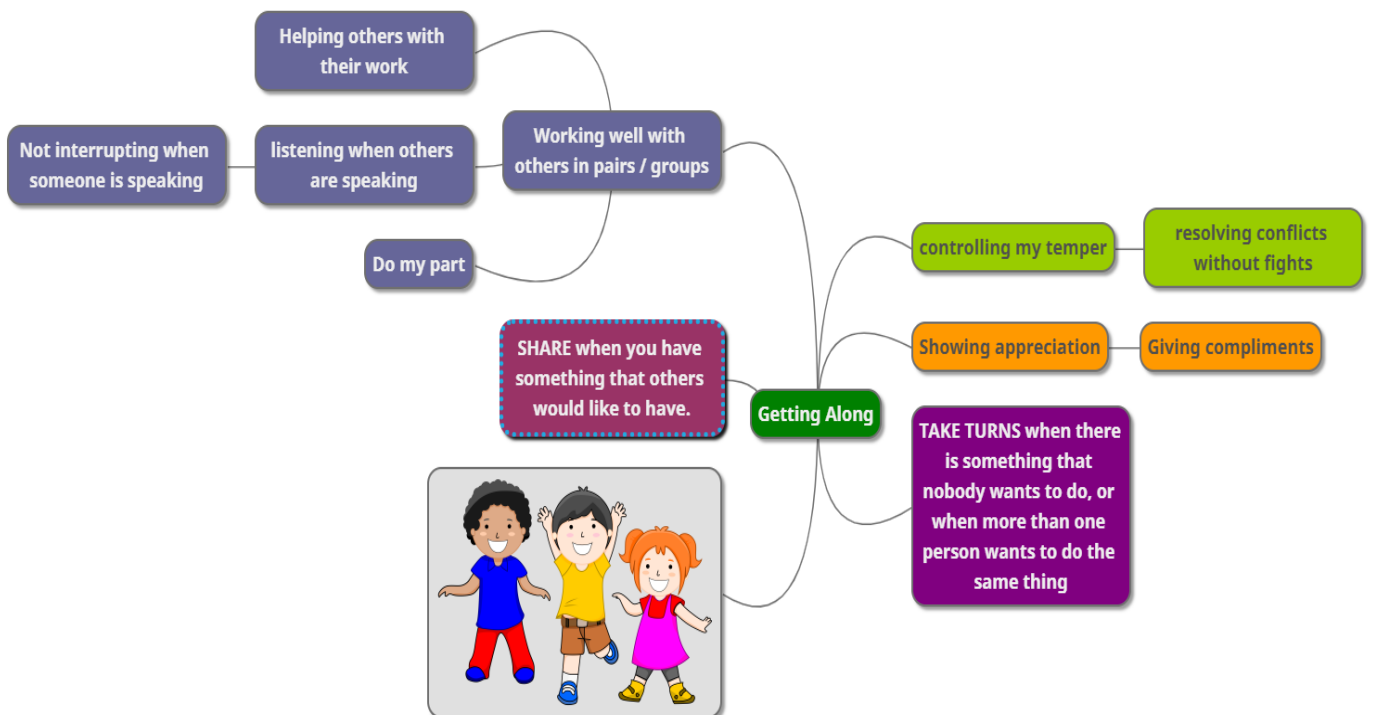
Steps

Today you participated in games to explore what helps you to get along with others. The games focused on the skills and behaviours you need to:

- protect everyone's right to learn, and their right to feel safe and respected
- be friendly, show respect and work hard

1. Think about all the skills and behaviours needed for everyone in your school room to get along and be cooperative.
2. Create a mind map on the blank page to record all of the skills and behaviours you could think of.

Example



Name:

Date:

Your Mind Map

A large, empty rectangular box with a thin green border, occupying most of the page. It is intended for a student to draw a mind map.

Name:

Date:

3. Use the sentence stem "Who agrees that to get along we must ..." to come up with ten complete sentences on the table.
4. Make sure your sentences are related to the behaviours and skills that either help or hinder how well everyone gets along.
5. Order your sentences from the most important to the least important when you write them into the table.
6. Share your sentences with everyone and ask them to tell you whether they agree or disagree. Use tally marks to show your results in the table (e.g. ~~||||~~).

Example

Always / Never	Agree	Unsure	Disagree
Who agrees that to get along we must always resolve conflicts with fighting or arguing?			
Who agrees that to get along we must never shout at each other when we want someone's attention?			

Your turn

Who agrees that to get along we must always / never ...	Agree	Unsure	Disagree
1.			
2.			
3.			
4.			

Name:

Date:

Who agrees that to get along we must always / never ...	Agree	Unsure	Disagree
5.			
6.			
7.			
8.			
9.			
10.			



Strength Detectives

Activity Two

Success Criteria

Year Six

- I described a range of personal qualities and strengths

Equipment

Pencils

Steps

Today you have learned how everyone has strengths, this is why they are called personal strengths. Personal strengths are also known as character strengths. Character strengths help you to make the most of the talents that come naturally to you and the skills and knowledge you acquire as you get older. Your strengths influence your personality, they are unique to you!

1. Read the following cards.
2. Write the strength you think matches the description on the blank line.
3. Colour in two cards that best describe you.
4. Choose a lighter colour for three different cards that sometimes describes you.

♡ Compassion ♡ Courage ♡ Creativity ♡ Determination ♡ Fairness ♡ Enthusiasm ♡
 ♡ Generosity ♡ Honesty ♡ Humour ♡ Tolerance ♡ Trustworthiness ♡ Loyalty ♡
 ♡ Hope and Optimism ♡ Self-control ♡

You do not hide from
challenging situations

You speak truthfully

You treat people fairly

You see the lighter side
and help people to
laugh

You have lots of
energy and excitement
for life

You stay true through
difficult times

♦ Compassion ♦ Courage ♦ Creativity ♦ Determination ♦ Fairness ♦ Enthusiasm ♦
 ♦ Generosity ♦ Honesty ♦ Humour ♦ Tolerance ♦ Trustworthiness ♦ Loyalty ♦
 ♦ Hope and Optimism ♦ Self-control ♦

You think of how others are feeling

You think of many ways to solve a challenge

You work hard to achieve your goals

You accept differences and distress without anger

You give your time and possessions freely

You control your desires and stick to your decisions

You always look on the bright side of things

You do what you say you'll do

5. Read the information about skills, talents and strengths

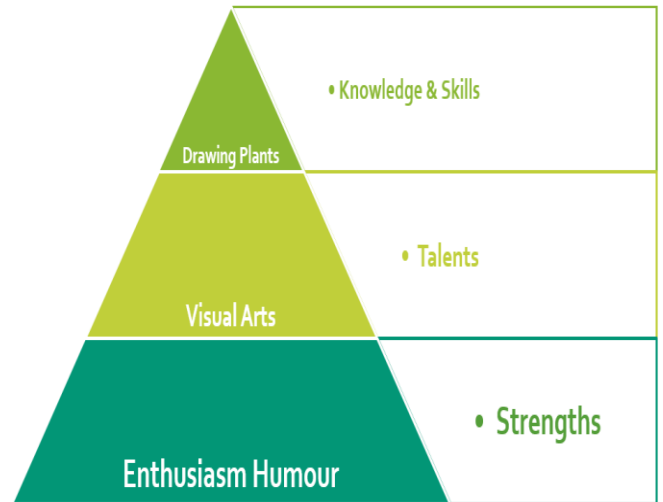
Skills	Skills are things you learn to do through practice, usually you keep practicing a skill until you get it right. You work to improve your skills by lots of repetition and using them in new ways.
Knowledge	Knowledge includes what you understand, perceive and are aware of. It can include things such as perceptions, facts and information. You gain knowledge through the experiences of your senses - seeing, hearing, smelling, touching and tasting, and through your skills - reading, viewing, talking, counting, measuring, classifying, comparing, making, etc. You can improve your knowledge by expanding your experiences.
Talents	Talents are the special abilities you have that let you do something without previous experience or someone teaching you how. You improve talents by gaining new skills and knowledge to build on what you do naturally.
Strengths	Strengths are the positive parts of your personality, they impact how you think, feel and behave and are the keys to being your best self. Your strengths help you to make the best of your knowledge, skills and talents.

Name:

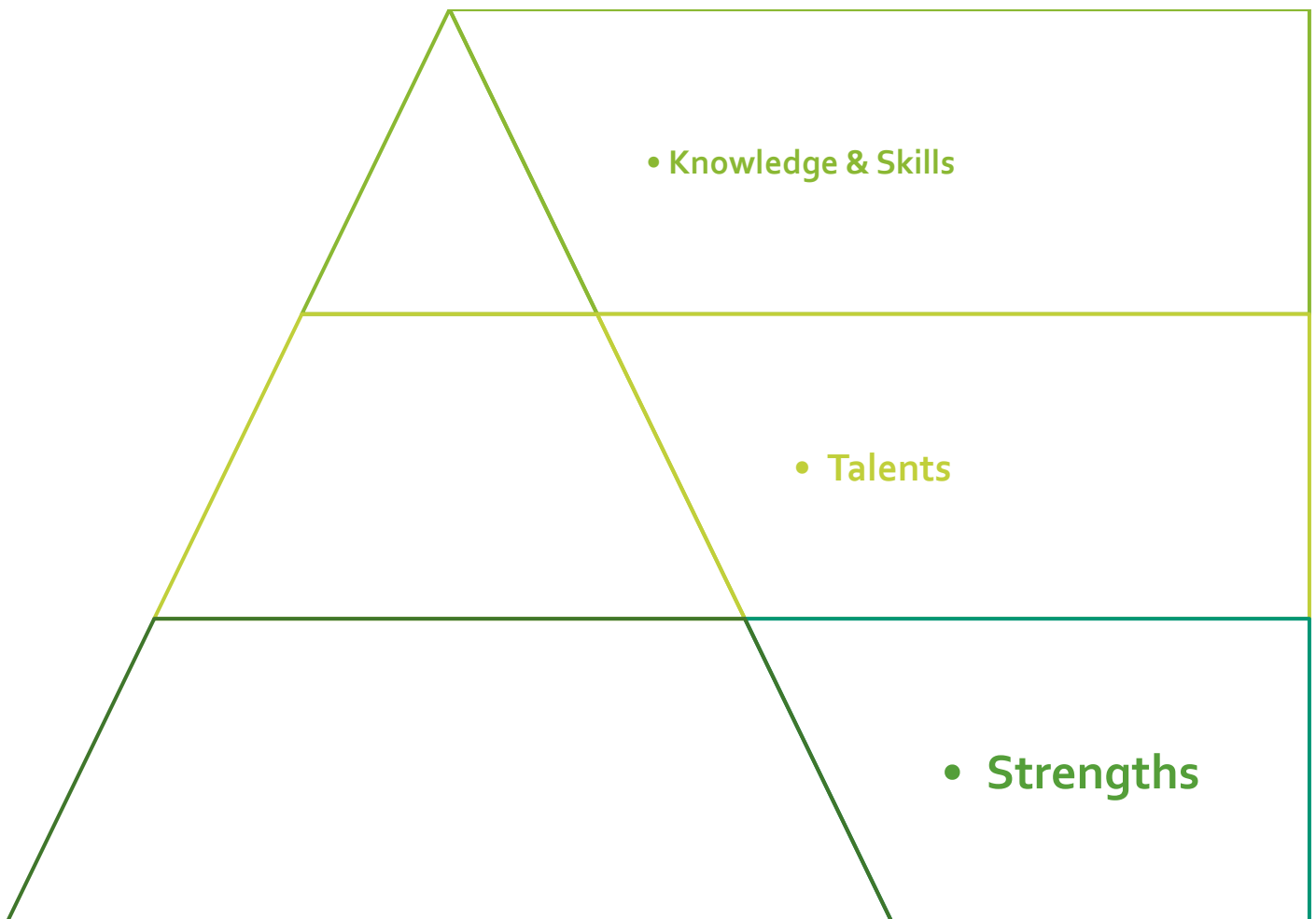
Date:

6. Use the pyramid outline to record some of the skills, knowledge, talents and strengths that make you unique.

Example



Your Turn



Strengths at Work

Activity Three

Success Criteria

Year Six

- I described a range of strengths
- I described ways that strengths influence me and others

Equipment

Coloured pencils

Computer and PowerPoint (optional)

Steps

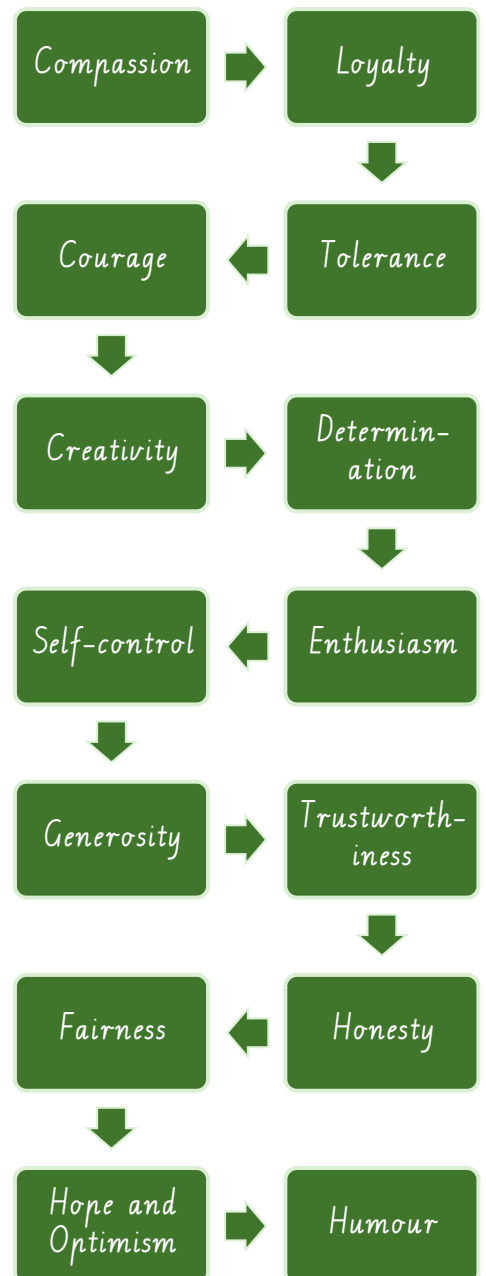
Today you participated in role plays where one of the characters was asked to use a particular strength to influence everyone around them. Can you think of a time when you used one of your strengths to influence the people around you?

1. Read the lists of Personal Strengths and choose two strengths that you believe you use to influence the people around you.
2. Write a paragraph to explain your thinking.

Example

My strengths are tolerance and loyalty. My Mum always says I am pretty tolerant when things don't go the way we planned. I am usually the one who is able to cope best with the change. I have noticed that I use my strength a lot to influence my little sister who will get upset when things aren't the way she

Personal Strengths



Name:

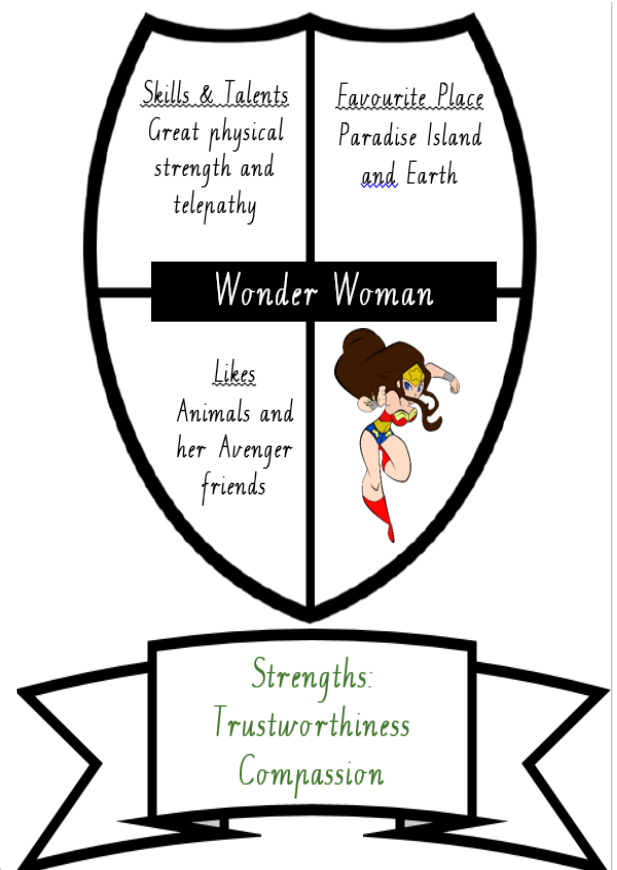
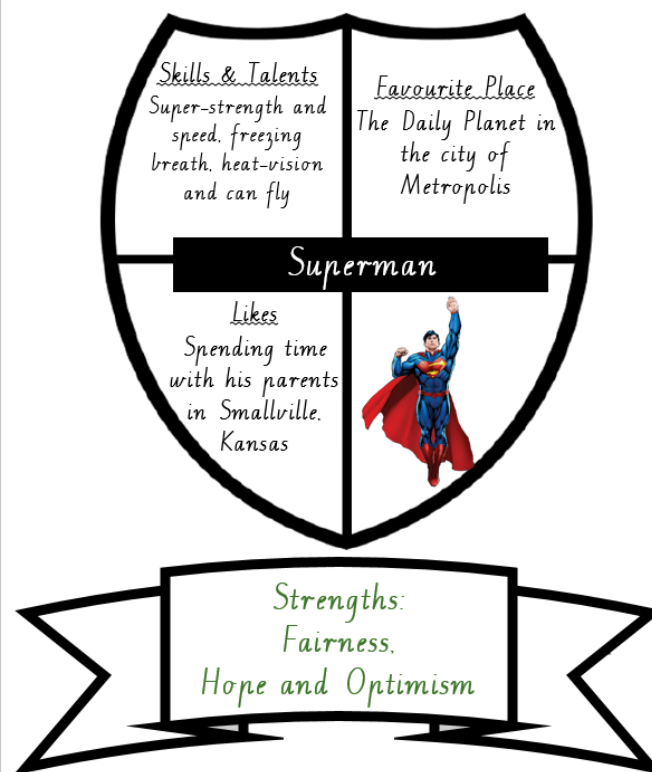
Date:

wants. I speak gently to her and try to help her find something else to do.

I am also loyal. Once I make a friend, I always do my best to help them and to see things from their perspective. I think I learned this from my parents who are loyal to each other. When Mum says something, Dad will often back her up and visa-versa. I think my loyalty strength helps me to influence others to look out for each other.

Your Turn

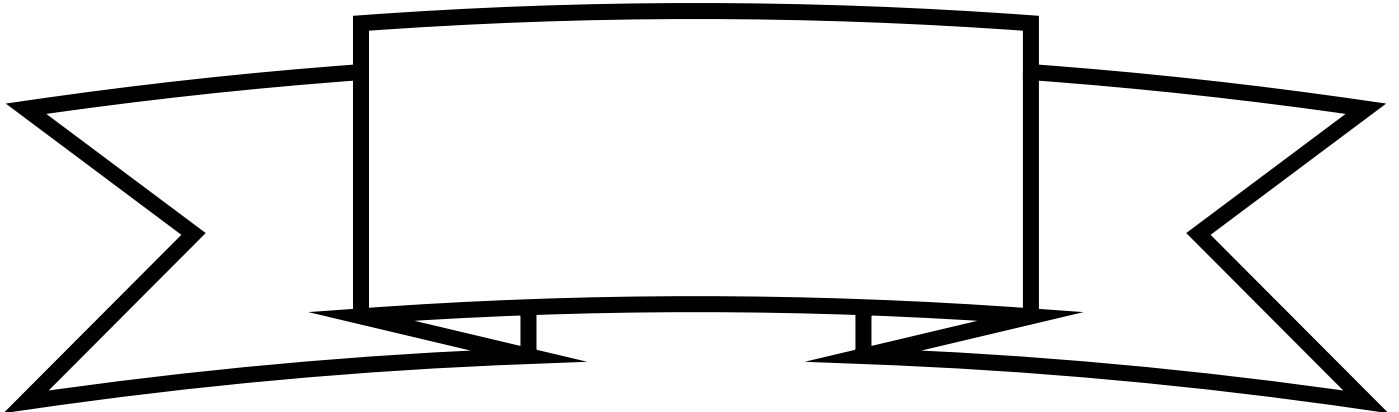
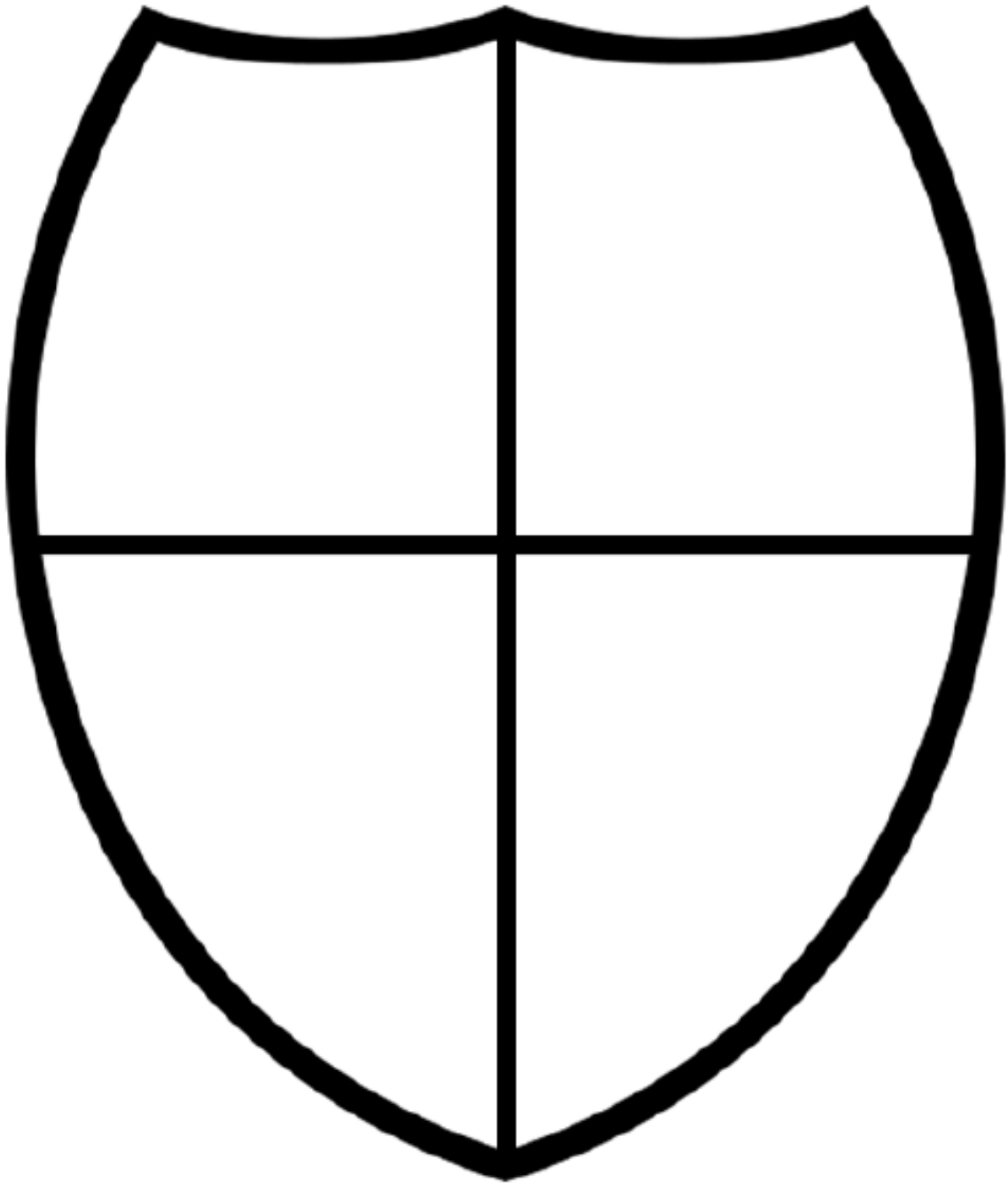
3. Read the Superman and Wonder Woman strength shields.
4. Choose one of the following options:
 - a. Create your own shield on the page provided using the Superman and Wonder Woman examples to fill in each panel **OR**
 - b. Use PowerPoint to make your shield as a slide show. Make sure you create a slide for each of your strengths and each of the panels on the shield, include actual photos that show you using your skills/talents, sitting in your favourite place and doing the things you like most of all. Make sure you upload your PowerPoint presentation with your activity book so your teacher can see it.
5. Share your work with everyone when you are finished.
6. Tell everyone how your strengths influence the skills, talents, favourite place and likes you included on your shield.



Name:

Date:

My Strengths Shield



Strengths in Action

Activity Four

Success Criteria

Year Six

- I described a range of personal strengths
- I described ways that strengths influence me and others

Equipment

Strength Cards (see
Resource Book)

Coloured pencils / textas

Computer (optional)

Steps

In this activity you will need to think about how people use their character strengths to help them deal with the challenges of everyday life.

1. Think about someone you admire, it might be a parent, a relative, a friend, or someone in the public eye. They can be younger than you, the same age as you or older than you.
2. Read the personal strengths below and think about what makes them a person you admire.
3. Write about your selected person on the next page.

Personal Strengths

Compassion Courage Creativity Determination Fairness Enthusiasm
Generosity Honesty Humour Tolerance Trustworthiness Loyalty
Hope and Optimism Self-control

Example

Someone I admire is

• my Dad.

I admire him because

• he is incredibly determined and never gives up
• shows great courage when life is hard.

He uses his strengths to

• keep trying until the barriers to what he wants are overcome.

Your Turn

Someone I admire is ●

I admire them because ●
●

They use their strengths to ●
●

4. Read through the Year 5-6 Mystery Strength Cards (see Resource Book) and select one strength that you would like to develop in yourself. Make sure you select a strength that does not come easily for you!
5. Create an advertisement for that strength. You can either use the blank page provided in this activity book or use your computer.
6. Include the following elements in your advertisement:
 - a. the name of the strength
 - b. a jingle or saying about the strength
 - c. three dot points about how this strength contributes to having a good life
 - d. an everyday action you can take to use the strength
 - e. an illustration or image that compliments your words
7. Share your advertisement with everyone when you are finished by talking about how this strength will help you to live well.

Strength Advertisement Example:

Honesty

It really is the best policy

- ✓ Allows a clear conscience
- ✓ Leads to better decision-making
- ✓ Encourages others to trust me



How to be honest
Own up when I do something wrong, it's okay to be wrong sometimes.

Name:

Date:

My Strength Advertisement:

Self-Assessment

Activity Five

Success Criteria

Year Six

- I reflected on what I have learned about getting along and personal strengths



Equipment

Coloured pencils / textas

Pencil

Steps

1. Read the *I Statements* in the checklist and put a tick in the column that best fits you.
2. On the table below, think about what you have learned about personal strengths

I Statements ...		
	on my own	with help
<i>I described what I can do to get along with others so we can all be safe, feel respected and learn.</i>		
<i>I described my personal strengths.</i>		
<i>I explained how I use my strengths in everyday life.</i>		
<i>I identified how my strengths influence my skills and talents.</i>		
<i>I described how I use my strengths to influence other people.</i>		
<i>I described how someone I admire uses their strengths.</i>		
<i>I understand how my strengths help me to live a good life and be happy.</i>		



3. Do a 'Think, Share, Record' to help you form your responses to the questions:
 - a. think about what you want to say on your own
 - b. share your idea/s with someone else (e.g. home tutor, sibling, parent)
 - c. write your idea.
4. Share your reflections with everyone.

What did I learn about personal strengths?

E.g. Talking about my own strengths and the strengths of others helped me to understand how they influence me in my everyday life.

What helped me to learn?

E.g. Talking with everyone else about their activities helped me to understand that people use their strengths in different ways.

What else do I want to know about personal strengths?

E.g. Why do people who are related have different strengths?



Art

This book has nine Visual Arts units for year 5-6 students to work on at home. They are designed to be enjoyable and challenging. The activities draw from the Australian Curriculum Visual Arts standards and are targeted to your child's year level.

Some units link to other subject areas. For example, the Memphis Designer Builders and Escher Metamorphosis link to STEM.

What materials do we need?

Most materials are readily available from Art and Craft supply stores or your newsagent. Possibly you will already have materials at home. Look around for things that you can re-use, such as fabric, boxes, plastic containers, foam trays or sponges.

We recommend that you set up an area where the student can return each day to continue the project. This might be in a study, under the house or on a spare fold up table in the living room.

How long do the units take?

The units are project based and are designed to take between 1-4 weeks from start to finish.

The activities work best if students work in chunks of about 1 or 2 hours, but the time frame can be changed to suit your schedule. For example, students might break an activity into two blocks.

If a student is enjoying a project and wants to do more work on it this is ok. Many of the units have options to extend.

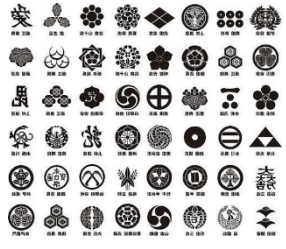
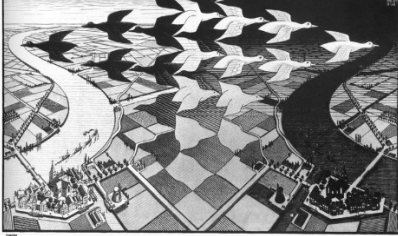




Home Learning Materials- Visual Art- 5-6




See attached documents for full descriptions of activities and examples.

Ask an adult or friend to help you follow any instructions and find the things you need.

Check if it is ok to use paint, etc at home and how to protect surfaces and clothes.

If you can't understand the instructions or haven't got the suggested resources, have a go anyway with what you have got and enjoy doing some art!

<p>Make your Mark- Design a Japanese Emblem Research Japanese emblems and their meanings.</p>  <p>Design an emblem for yourself or your culture. Draw it in different media, e.g. pen, pencil, digital.</p> <p>In this project you will develop your understanding of the role of symbols to represent identity across different cultures and reflect on your own identity.</p>	<p>Escher Metamorphosis Look closely at the picture "Day and Night", by Escher in 1938. What transformations or dualities are evident? From black to white, night to day, figure (object) to ground and from flat fields to living birds.</p>  <p>Create an image, an animation or a plot outline for a short story that shows progressive evolution, metamorphosis, transformation, or duality.</p>	<p>Cartoon Letters Have a look at some cartoon letters in comics or online, e.g. bubble writing. Have a go at writing your name in different cartoon writing styles. Design your own cartoon writing style.</p> <p>If you learn how to draw cartoon letters, you can have fun adding it to your art, or reports or book covers, whatever appeals to you. The letters can be coloured with markers or painted and applied to a range of different projects.</p> 
<p>Foolproof Printmaking Basic Printmaking Techniques – Look at some relief, monotype, and silkscreen prints.</p> <p>Make a printing block by using cardboard and gluing on some found objects e.g, leaves, string, paper, fabric. Paint and use to make prints.</p> 	<p>Owl Drawings The Owl Drawing lesson is inspired by the <i>Animals in Art Lesson</i> by Patti Caiola. It is inspired by the animated film, Legend of the Guardians: The Owls of Ga'Hoole.</p> <p>Choose a type of owl you are interested in and draw your own owls, using lead pencils and a rubber to shade, or finger to blend.</p> 	<p>Line and Pattern Drawings These are designed as assignments for you to complete at home in your visual diaries. They are used as a way in which to improve your drawing skills.</p> <p>There are 13 pattern drawing activities listed.</p> 

<p>Sidney Nolan- Ned Kelly In this lesson, you will be introduced to Sidney Nolan’s Ned Kelly series and their significance as one of the greatest sequences of Australian paintings in the 20th century.</p> <p>Follow the links in the attached lesson plan on Sidney Nolan’s Ned Kelly series and watch the video clips. Read about Ned Kelly.</p> <p>See if an adult can have a look at the sheet and ask you the quiz questions in the introduction and conclusion.</p> <p>Find images of Sidney Nolan’s Ned Kelly series online.</p>  <p>Using acrylic paints (or whatever you have), create a picture employing the same techniques used by Nolan. E.g. strong colours with a black figure.</p>	<p>Memphis- Designer Builders In this project you will explore the role of modernity in design by examining works by the Memphis design group.</p> <p>You will develop your fine motor skills and understanding of shape and measurement by planning and creating a geometric three-dimensional design which reimagines an everyday object.</p> <p>Draw a design for a piece of furniture using block colour and patterns in strong shapes. Make your design using craft paper or card from food packets.</p>  <p><i>Armchair</i></p>	<p>Suburban Collages inspired by Howard Arkley In this activity you will develop your understanding of visual conventions and artistic practices in Australian contemporary art.</p> <p>Design a patterned house inspired by Howard Arkley.</p> <p>Make it using collage materials such as different coloured paper, wrapping paper or fabrics.</p> <p>Talk about the discussion points with a friend or family member.</p> 
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With all the activities, reflect on the art you have created and think about:

- What worked and didn’t work?
- Which parts do you like or not like? Why?
- What would you do differently next time?
- What have you learned?

GREAT ART IDEAS FOR PRIMARY SCHOOL TEACHERS

MAKE YOUR MARK: DESIGN YOUR OWN JAPANESE INSPIRED EMBLEM

YEAR 5–6

OVERVIEW

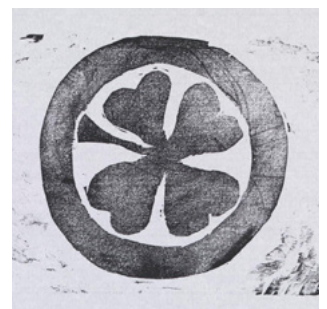
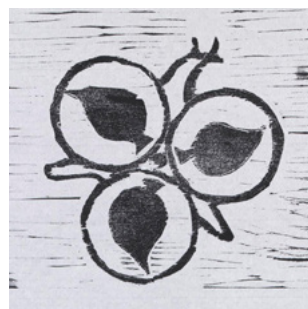
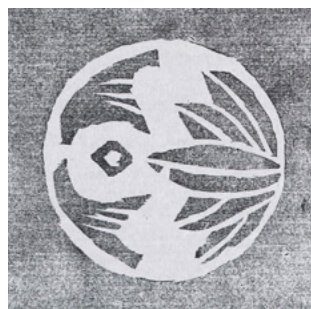
In this project students will develop their understanding of the role of symbols in representing identity across different cultures and reflect on their own identities. They will develop their expressive art-making skills by designing and printing an emblem which represents themselves or a group to which they belong.

LEARNING OBJECTIVES

Students will:

- Identify and describe how ideas of belonging and identity are expressed in emblems and crests by comparing artworks from the different historical and cultural contexts of Japan and Europe.
- Create a personal symbol or motif that explores and represents their own individual identity using a variety of materials.
- Create a printing block for their design and print multiple prints.
- Analyse how symbolic meanings are constructed in their own artworks and the artworks of their peers and reflect on how effectively their ideas have been expressed.

STUDENT EXAMPLE



Woodblock prints created by Emmanuel College students at the NGV

RELATED ARTWORKS



Japanese

Sword guard with chrysanthemum design Edo period (1600–15)–1868

(*Kikuka zu tsuba* 菊花図鐔)

iron

0.6 x 7.1 cm diameter

National Gallery of Victoria, Melbourne

Felton Bequest, 1916



England

Sir John and Lady de Hardreshull, panel 14th century

stained glass, lead

72.8 × 59.9 cm

National Gallery of Victoria, Melbourne

Felton Bequest, 1922



Japanese

Box for horse trappings with chrysanthemum crests Edo period (1600–15)–1868

(*Kikumon iri umakazari bako* 菊紋入馬飾箱)

lacquer and gold leaf on wood and leather,

paper, metal, (other materials)

(a-c) 29.6 x 67.0 x 42.0 cm (overall)

National Gallery of Victoria, Melbourne

Accessioned, 1888

DISCUSS

Mon is the Japanese word for an emblem. Comprising of bold, symbolic elements, *mon* are used in Japan to identify a group, an individual or an institution. *Kamon* is the Japanese word for a family emblem or symbol which identifies ancestry. *Kamon* are thought to have been first used by noble families at the end of the Heian Period (794–1185) to mark possessions. They appeared on flags, clothes, furniture, buildings and personal items. Today, there are many thousands of distinct *kamon*, for example the chrysanthemum seal is used by the Imperial family of Japan and can also be found on the Japanese passport.

In European countries, many noble families had a coat of arms and crest as a symbol of identity. In *Sir John and Lady de Hardreshull, panel*, 14th century, the Lord and Lady hold up their family coat of arms, which features birds on the shield (martlets).

Introduce your students to the related works of art and use the following discussion prompts to explore the formation and expression of family identity:

- Find a chart of *mon* on the internet and look at the example of Japanese *kamon*. What qualities do they have in common?
They are often circular and use a single flat colour, with positive and negative shapes rather than tone. They use a single motif, like a plant, flower or an abstract design that holds symbolic meaning.
- Compare examples of emblems from Japan with the European example. How are they different and what do they have in common?
- Work in groups of two or three:
 - List all the different groups you belong to, for example, family, clubs, school, and cultural groups.
 - Draw symbols or signs that might represent those groups.
 - Share what each group has discovered with the class.

RESOURCES & MATERIALS

- A4 sketching paper
- Grey lead pencils
- Lino carving tools
- Ink rollers (for inking the printing block)
- Bamboo baren or hard rollers for printing
- Paper
- Acrylic plate or smooth surface for rolling ink
- Carbon paper or tracing paper for transferring the design
- Soft cut carving blocks (printing rubber), Japanese woodblocks (plywood) or lino tile
- Water-based block printing ink (black or red)

CREATE

Students design and print their own emblem using the following steps:

1. Sketch ideas for a symbol to represent in a print.
It should represent you or one of the groups you belong to, for example your family, or a sporting group.
2. Refine the symbol into a simple, bold emblem that fits in a circle. The size should fill the whole printing block.
Remember that images print in reverse.
3. Transfer the design to the block using carbon or tracing paper.
4. Using lino carving tools, carve away the areas of the design that will remain white.
5. Spread the printing ink onto a smooth surface with a hard roller and then ink the printing block.
6. Place your paper on to the block and roll across it with a roller to print your emblem.
Alternatively, you could rub it with a bamboo baren or run it through a printing press for the same effect.
7. Re-ink the block and repeat step 6 to create an edition of prints.
You might like to try printing the design onto a different surface such as fabric or wood.

PRESENT & REFLECT

Students can show their emblem to the class and mount them as a display to form a class portrait.

- What artistic choices did you make when creating your design?
- How does your design represent you or the group you have chosen?
- What changes might you make to improve your work?

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EXHIBITION THEMES AND IDEAS

METAMORPHOSIS

Metamorphosis – a change from one state to another – was another idea that captivated Escher. From 1937 Escher began a series of prints exploring the possibilities suggested by such transformations, inspired in part by a thought association game he had played as a child, in which he challenged himself to connect two arbitrary ideas with a logical series of steps.²

One of the earliest of these was *Metamorphosis I*, 1937, which begins on the left with the realistic depiction of Atrani, a village on the Amalfi Coast of Italy, transitions to abstract cubic forms that then flatten into tessellating shapes from which a little figure emerges on the right. The image changes from a realistic landscape to geometric forms and pattern, to a single figure; from a representation of three dimensions to two. *Metamorphosis II*, 1939–1940, which developed from *Metamorphosis I*, was a four metre long woodblock print printed from sixteen blocks that began and finished with the word 'metamorphose', included ten transformations and like *Metamorphosis I* also incorporated the village of Atrani.

Day and Night, 1938 was Escher's most popular print – he printed over 650 copies. *Day and Night* includes many transformations and dualities (opposites, contrasts or counterparts).

DISCUSSION POINTS:

- Look closely at *Day and Night*, 1938. What transformations or dualities are evident? From black to white, night to day, figure (object) to ground and from flat fields to living birds are some you might notice.
- What other ideas or associations does this image raise for you?

STUDENT TASK:

- Play Escher's metamorphosis game. Select two random objects. In small groups find steps to link them together and then compare the different paths each group has taken.
- Metamorphosis can be seen as an allegory for different kinds of development and change that might not always be visible. Many 'heroes' journeys' are an example of metamorphosis through experience, in which a new character emerges after a series of trials. Many transformations in stories such as the gothic novel *Dr Jekyll and Mr Hyde* by Robert Louis Stevenson, are about the opposites that can exist inside one person. Create an image, an animation or a plot outline for a short story that shows progressive evolution, metamorphosis or transformation, or duality.



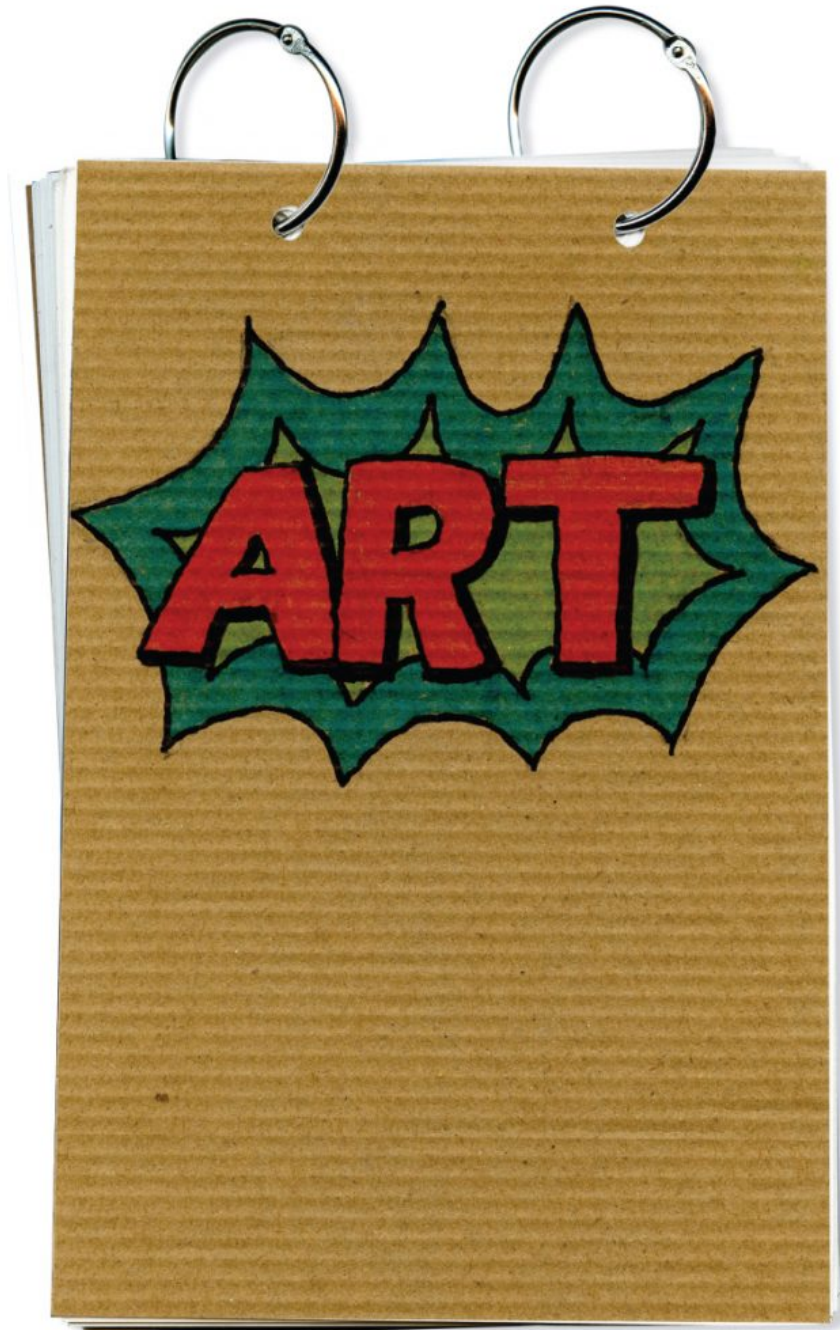
M. C. Escher
Metamorphosis I May 1937
woodcut on two sheets
Escher Collection, Gemeentemuseum Den Haag,
The Hague, the Netherlands
© The M. C. Escher Company, the Netherlands.
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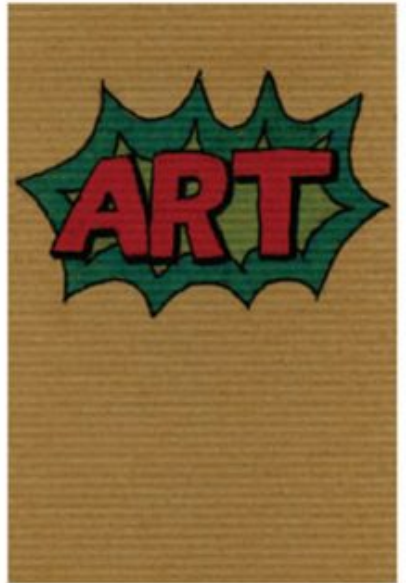
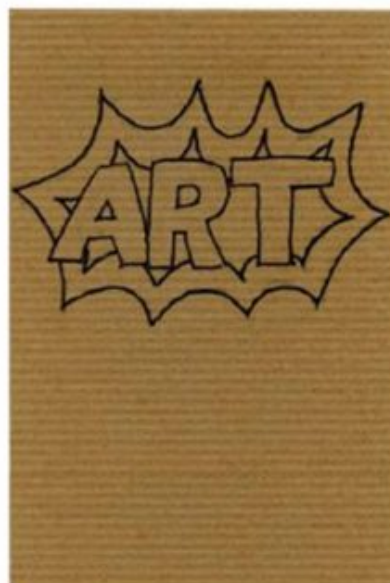
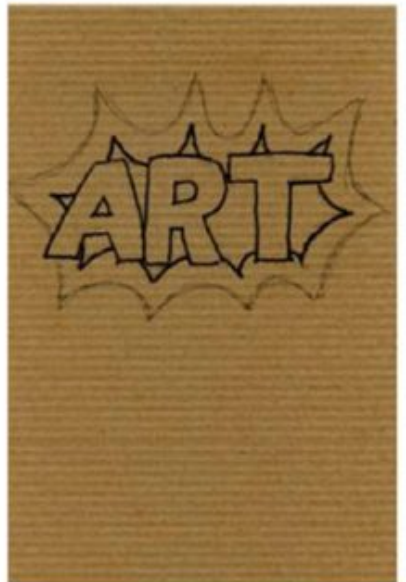
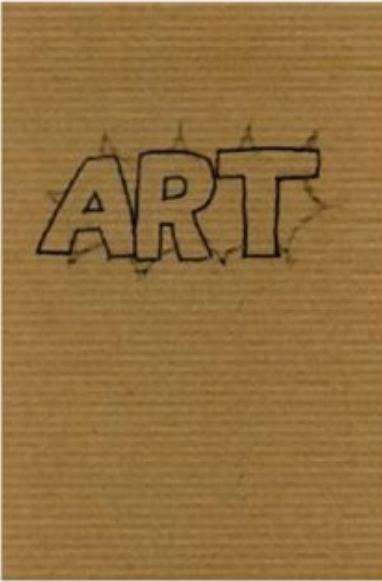
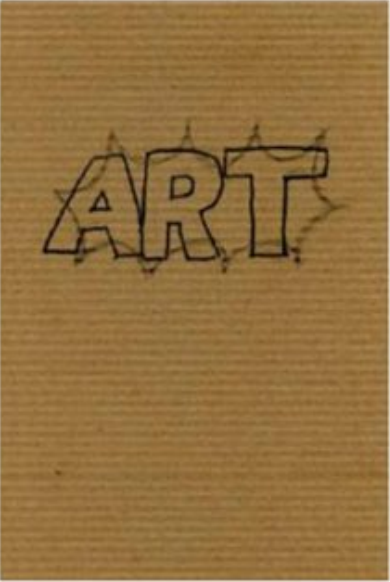
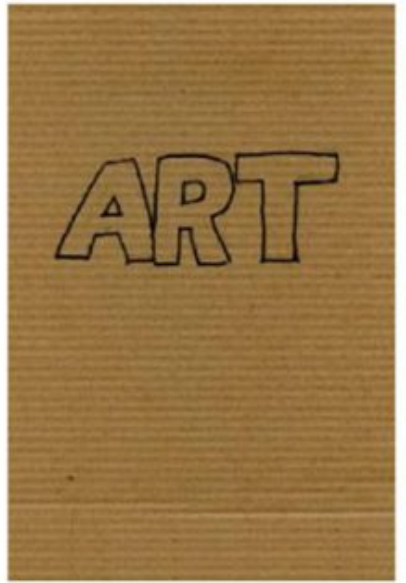
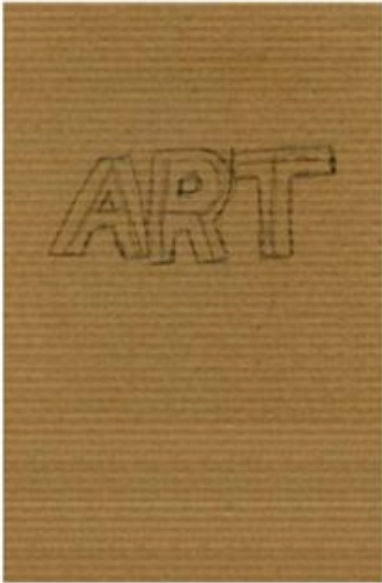
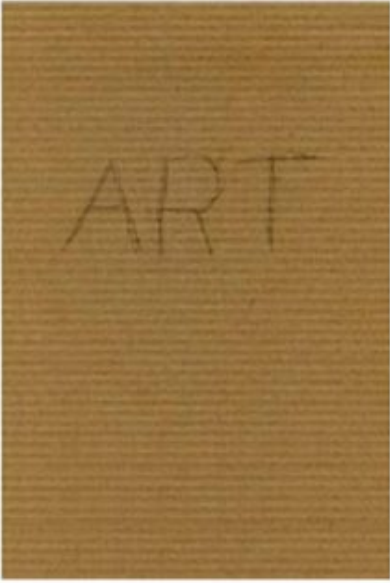
M. C. Escher
Day and night February 1938
woodcut, printed in grey and black inks
Escher Collection, Gemeentemuseum Den Haag,
The Hague, the Netherlands
© The M. C. Escher Company, the Netherlands.
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Draw Cartoon Letters

[Cartoon Drawing](#), [Drawing](#), [lettering](#), [Markers](#) |

If students learn how to draw cartoon letters, they can have fun adding it to their art, or reports or book covers, whatever appeals to them.







Years of experimenting in the classroom helped me develop a very inexpensive way to make art journals with hundreds of students, for just pennies apiece. And rather than create more work they actually streamlined the classroom process.

Whenever possible, I would provide students with corrugated cardboard for the cover. After watching too many of them just scribble their name on the front, I started making cover art one of the projects. This cartoon lettering was a favorite. You can read more about my **Recycled Art Journals** [HERE](#).

MATERIALS

- [Art Burst Cover Tutorial PDF \(Download here\)](#)
- Paper or cardboard for a journal cover as shown
- [Markers, I used the Stabilo brand*](#)
- [Black Sharpie, fine tip*](#)

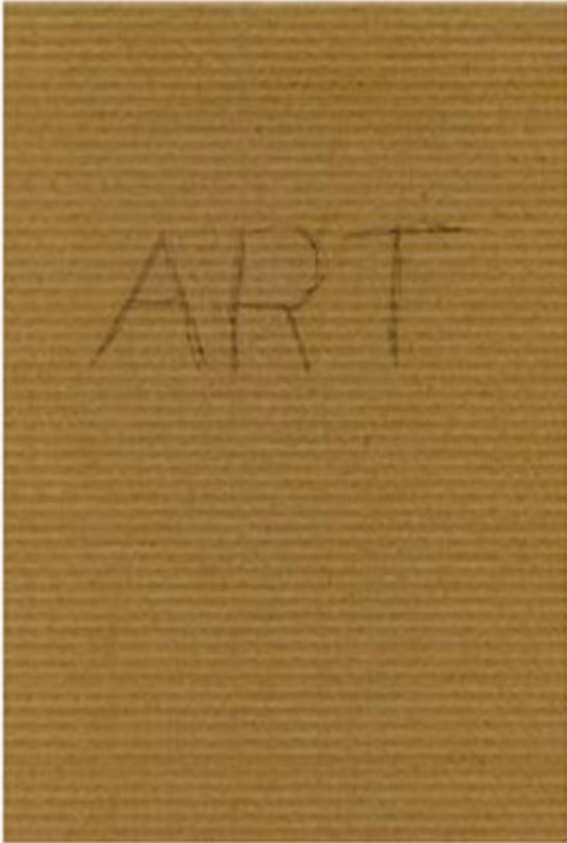
**The above product links are a referral. If you click through and take action, I'll be compensated a small amount, at no extra expense to you.*

DIRECTIONS

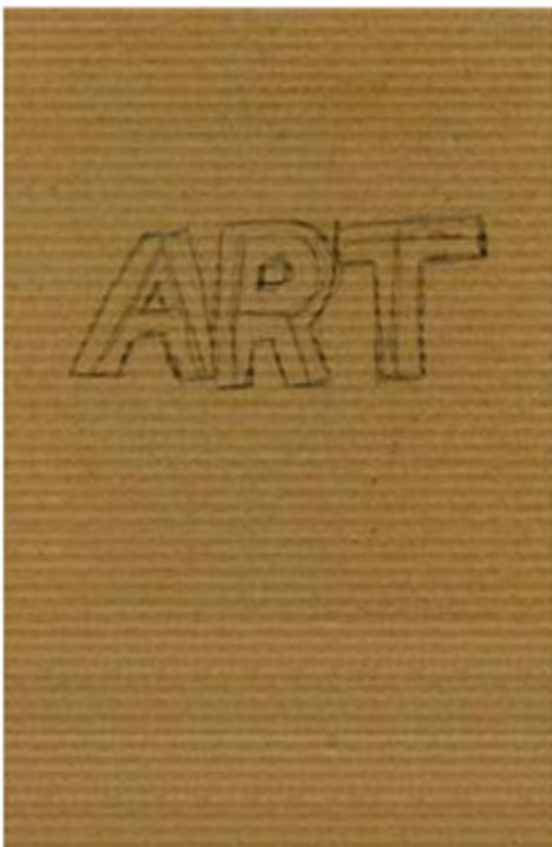
Time needed: 1 hour.

How to Draw Cartoon Letters

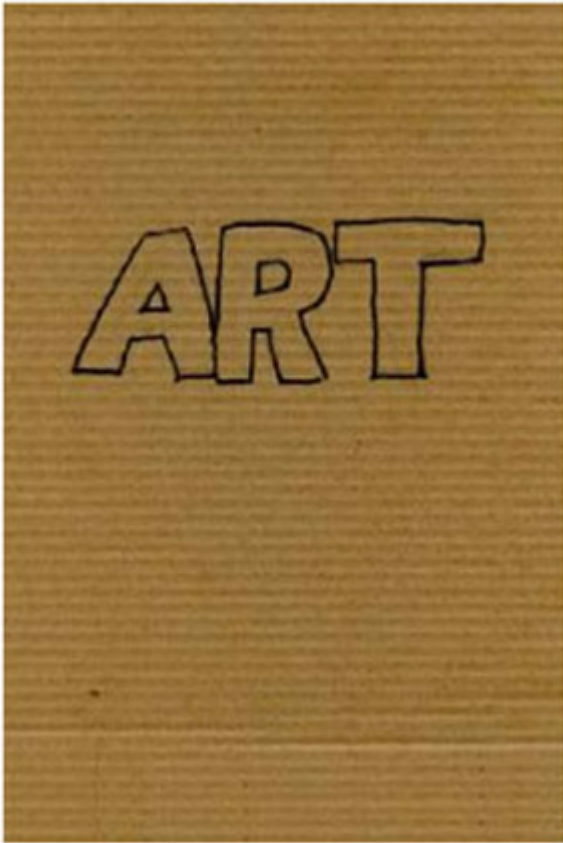
1. **Lightly draw large capital ART stick letters.**



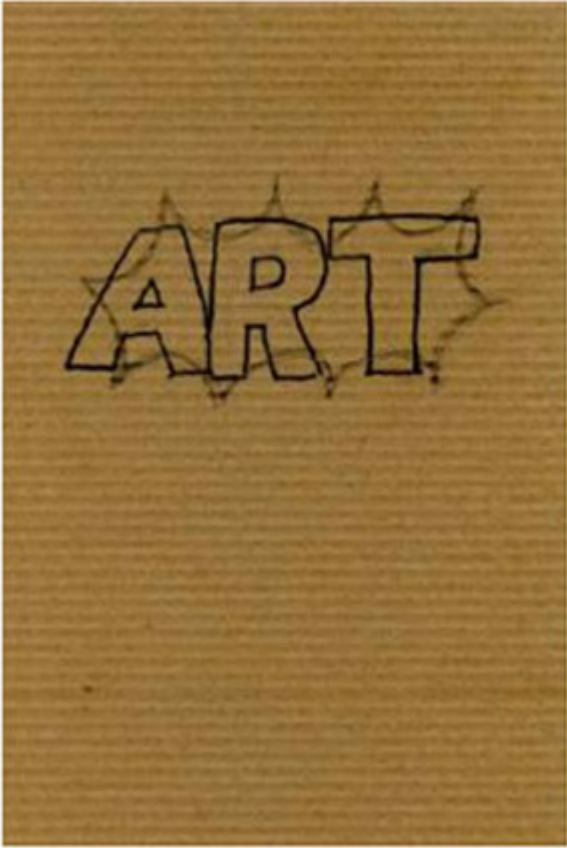
2. Trace around the stick letters to turn them into block letters.



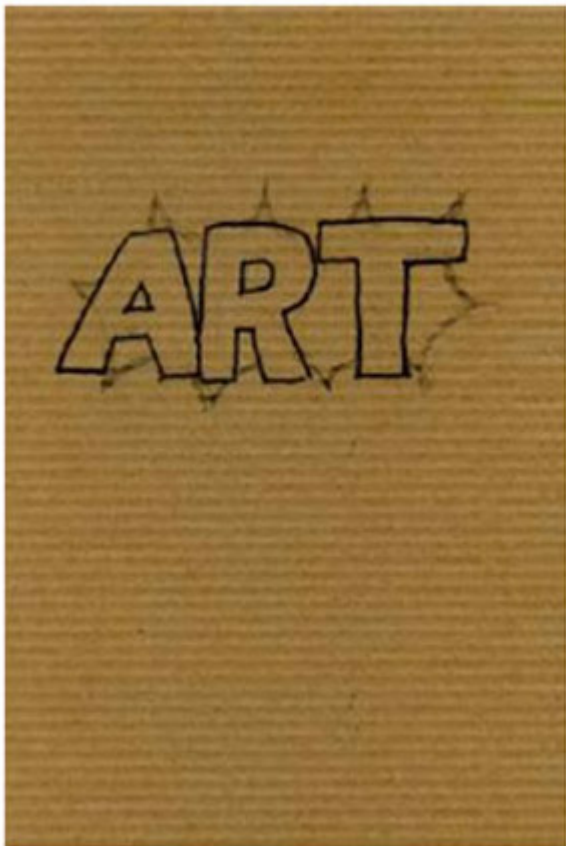
3. Trace the block letters with a marker. Erase pencil lines.



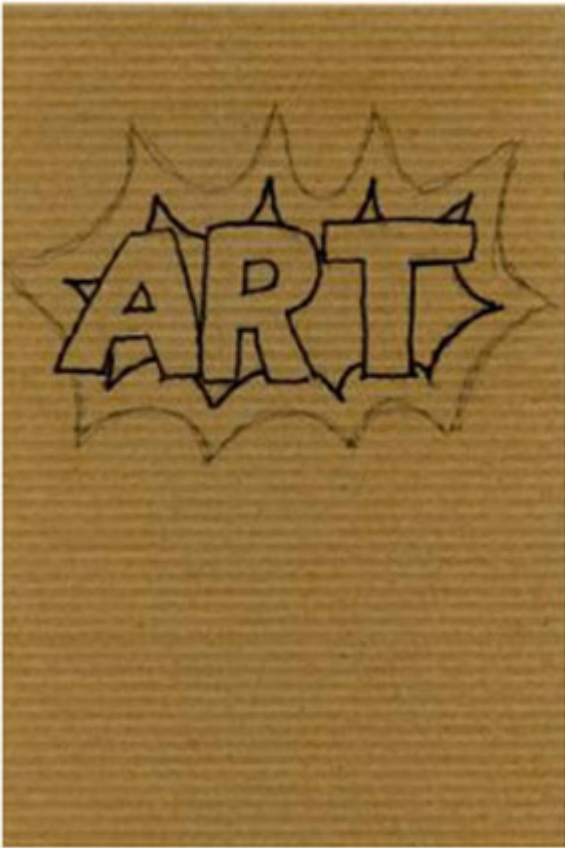
4. Draw a burst in pencil. Note: It MUST be smaller than the letters.



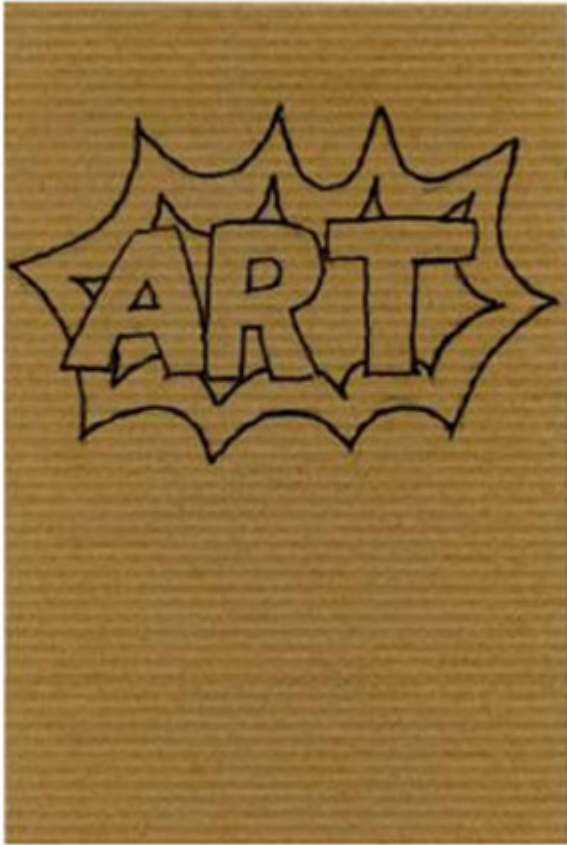
5. Erase all the burst lines inside the block letters.



6. Trace small burst lines with a black marker. Draw a larger burst around the outside.



7. Trace the larger burst with the marker.



8. Use the marker to draw a shadow on the bottom and right of each letter.



9. Color with markers, using contrasting colors.



Incredible Art Home

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Art Activities

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Color Printing

Fool Proof Printmaking

Submitted by: [Lindsay B](#)

Sidney City Schools

Title of Lesson: Fool-Proof Printmaking

Grade Level: Adaptable, 3 - 12

Goals/Objectives:

Design and create a printmaking block. My goal for my students after they have made it is to make an edition of three identical prints, I have done this with sixth grade, but it can easily be adapted to other levels.

Supplies:

- Cardboard (I use 5" by 5" [12.7 x 12.7 cm] squares of scrap cardboard, I HAVE TONS OF IT.)
- [Scissors](#)
- [White Glue](#)
- Scrap Paper
- [Tempera Paint](#)
- [Construction Paper](#)

**Could also use relatively flat found objects--buttons, puzzle pieces, etc. Need to be the same height off the surface.

Books:

[The Printmaking Bible: The Complete Guide to Materials and Techniques](#) - The Printmaking Bible is the definitive

resource to the ins-and-outs of every variety of serious printmaking technique practiced today.

Basic Printmaking Techniques - Share the excitement of relief, monotype, and silkscreen printing with your students. Clear text and visual demonstrations present a variety of techniques that students can perform with a minimal amount of training and equipment.

Procedures:

The students do thumbnail sketches of designs that can be abstract or purely decorative or they can have meaning/symbols.

After they decide on a design they draw it with pencil on the cardboard. Then they use glue to attach string directly over their pencil marks.

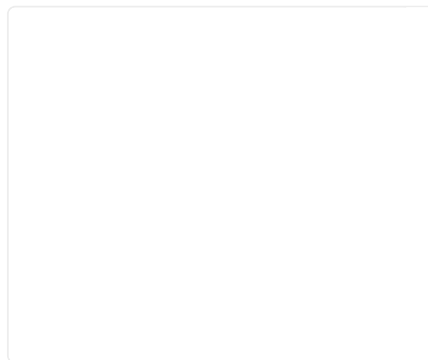
**Words/letters need to be a mirror image and not too close together or they will have a hard time gluing the string in place.

The glue needs to dry completely before they can paint over the string, I usually have them stick with one color so the paint doesn't dry out before they can print with it. They then put papers on top of the cardboard and string and rub to transfer the paint. I always make them do test prints before using construction paper to do 3 identical prints.

This could be modified, maybe have them do 4 prints with bright colors, pop art connection. Do a symbol from pop culture, lots of possibilities.



Click on the images for full size



Delmore Gallery

**Art Lessons:
Creating
Zentangles**

**Wallrus murals -
Transform Your
Space**

**Relief
Printmaking
Handout**

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Black and White Owl Art

Sketch Art

Owl Drawings

Submitted by: [Michele Briggs](#), visual art teacher at Biloela State Primary School in central Queensland Australia

Level: Year 3 - 6

Background:

The Owl Drawing lesson was inspired by the [Animals in Art Lesson](#) by Patti Caiola. However, I had just been to see the animated film, [Legend of the Guardians: The Owls of Ga'Hoole](#) so I decided to use the [posters](#) from the movie as part of the examples of owls. A tie-in to science would be if you covered the habitat and habits of owls.

Materials needed:

[Drawing Paper](#) and visual diary or [Sketchbooks](#) for work up sketches, HB and 2B [Drawing Pencils](#), and [Kneaded Rubber Erasers](#)

Preparation:

Students Viewed the posters for [Legend of the Guardians: The Owls of Ga'Hoole](#) and we discussed what the animators needed to do to be able to create the images. (That is they needed to study and be able to draw the owls and all the details.) We then looked at the patterns in the feathers and discussed the shapes and proportions of the different owls.

I then demonstrated how to draw the eyes with the

X





Students did their work-up drawings in their scrap books / sketchbooks. I then demonstrated how to draw trees and a background. Students then chose the type of owl they were interested in and drew their own owls. The students drew the eyes first after sketching the contour lines for their owls.

Resources

Posters

[Great Grey Owl Family Bird](#)

[16 Awesome Owls Poster](#)

X

Zozi Designs

**One Day Art
Lesson Ideas**

**Emily Kame
Kngwarreye**

**Element:
Sub Plan**

Ad Zozi Designs

incredibleart.org

Ad www.delmoregallery.co...

incredibleart.org

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19
Shares

Goal:

These are assignments for students to complete at home. They are used as a way in which to improve their drawing skills.

Procedures:

All assignments need to be in your sketchbook with the label attached to the back of the page.

**Materials:**

- [Sketchbooks](#)
- [Drawing Pencils](#)
- [Colored Pencils](#) or [Prismacolor Colored Pencils](#)
- [Felt Tip Markers](#)
- [Crayons](#)
- [Kneaded Rubber Erasers](#)

Fill the page with as many lines as you can.

- Try to make as many types of lines as you can. Repeat each type of line several times.
- Try all types of lines: wavy, curly, jagged, dashes, fat, thin, etc.
- Fill your page with as many lines as you can. Teacher: assign as color or B/W.

Fill the page with groups of lines, which move together, changing direction with angles. Unlike the expressive, directional lines are very precise. Lines should all be the same thickness. These lines look as if they are bending and overlapping. This is not "free" like expressive lines) but calculated constant, and even.

- Start anywhere on your paper. Move in a certain direction. stop and begin in a new direction Keep lines in a group the same distance apart.
- Try to go in every direction at least once

Teacher: Assign as color or B/W Color or black & white.

1. Create a contour line drawing of the items in your pocket or purse. (I'm looking at composition)
2. Draw a food scene using contour line. Have items leaving the page, overlap, make things large and close up.
3. Create a series of six different sketches of the one object from different points of view. Include some shading/highlight references. (X)
4. Enlarge something that is miniature (tiny, small). (section of a ballpoint pen, radio dial, coins, insect...)
5. Drawing of a pet. (if you don't have any pets, get a picture of any animal and tape it across from your drawing)
6. Create a drawing of your dirty laundry. Think creative! Maybe the laundry is drawn hanging outside of the basket, or on the floor, or piled on a chair in the corner of your room. Since you are drawing fabric you will need to use value (shading)! (I'm looking to see how you will problem solve for drawing different pieces of fabric)
7. Draw two crumpled up pieces of paper and a ribbon. Shade using a minimum of five different values and use your eraser to create highlights. Create a great composition. Really

look at what you are drawing.

8. Draw your foot holding an object that you wouldn't expect to see between your toes. Use stippling and cross hatching to shade the value. Make sure you really draw the details and not just what you think you see.
9. Draw two (or more) people lounging (watching TV, playing video games, reading, chillin', etc.) with marker. Use your watercolor set to paint the scene with a high level of contrast and a warm or cool color scheme. Make sure your people aren't floating around.
10. Draw a grid with 8 spaces. Choose an object and in each space turn the object into something new. For example a potato peeler becomes a bride, a compass, a butterfly, a monster, a frog, a dancer, etc.
11. Your free choice of subject you prefer including one you may have done previously.
12. Use your imagination, Create a scene that could only take place in your wildest dreams. Mythical creatures such as dragons, sea serpents, and unicorns are also part of the fantasy world.
13. Artists have often explored the concept that animals or things look amusing performing actions restricted to human behavior. (Dog reading the newspaper at the breakfast table)

Resources

- [Sketchbook Ideas](#) - A page on IAD of resources regarding ideas for sketchbooks.
- [Advocacy for Sketchbooks in Elementary](#) - Information on sketchbooks and other resources on IAD.
- [Sketchbook Ideas for Elementary](#) - Ideas for the elementary level on IAD.
- [Sketchbook Assignments for High School](#) - This IAD page includes ideas for sketchbooks at the high school level.
- [Sketch book Choices and Ideas](#) - A list of ideas for sketchbooks. Another page on IAD.
- [Creating Sketchbook/Journals](#) - Another high school lesson on IAD.
- [Sketchbooks - Engaging Creativity](#) - A lesson by Nicole Brisco on IAD.
- [Sketchbook Ideas-Labels](#) - Another list of ideas on IAD.

Teacher Lesson Plan

Sidney Nolan - Ned Kelly series

Lesson Title:

Sidney Nolan - Ned Kelly series

Stage:

Stage 3 - Year 5/6

Year Group:

11-12 years old

Resources/Props:

Interactive Whiteboard

Meet Ned Kelly youtube video clip written by Janeen Brian, illustrated by Matt Adams and retold by Renata Posa: https://www.youtube.com/watch?v=NIISPSF8h_o

National Gallery of Australia website link of 'Deborah Hart Nolan Kelly Series Introduction'
<http://nga.gov.au/nolan/index.cfm#source>

National Gallery of Australia, 2002, Sidney Nolan's *Ned Kelly* - The Ned Kelly Painting in the National Gallery of Australia, Publications Department of the National Gallery of Australia

Language/vocabulary:

Iconic, outback, history, armour, national, gallery, Australia, series, narrative, events, arrest, sequence, siege, trial, literal, purpose, violence, injustice, betrayal, imbalance, living conditions, primary, secondary, sources, viewpoint, empathy

Lesson Overview:

In this lesson, students will be introduced to Sidney Nolan's Ned Kelly series and their significance as one of the greatest sequences of Australian paintings in the 20th century. Students will learn how Nolan's Ned Kelly series has a strong narrative presence but also reflects his own life and the world of violence and injustice, with a particular emphasis on examining the living and working conditions for people living in 19th century colonial Australia.

Students will explore the main aspects of Nolan's Ned Kelly series and his purpose for creating these works of art which encompass Australian history inclusive of Indigenous Australians, Australian landscape and European modern art. Students will identify Nolan's style of painting and have the opportunity to critically analyse this style through a compare and contrast activity. Furthermore, they will use this gained knowledge to participate in an art making activity to refine their practical skills.

Aims and Objectives:

Upon completion of this lesson, students will be able to:

- Identify and sequence the collection of Sidney Nolan's Ned Kelly series of paintings
- Gain insight into the purpose, style and influences of Sidney Nolan's works of art
- Critically analyse and respond to various pieces in Sidney Nolan's Ned Kelly series
- Participate in an art making experience
- Explore Australian living conditions in the 19th century for European settlers

Teacher Lesson Plan

Sidney Nolan - Ned Kelly series

Australian Curriculum:

Key Learning Area: Visual Arts

- Explore ideas and practices used by artists, including practices of Aboriginal and Torres Strait Islander artists, to represent different views, beliefs and opinions (ACAVAM114)
- Explain how visual arts conventions communicate meaning by comparing art from different social, cultural and historical contexts, including Aboriginal and Torres Strait Islander artworks (ACAVAR117)
- Develop and apply techniques and processes when making their artworks (ACAVAM115)

Key Learning Area: Humanities and Social Sciences

- Examine different viewpoints on actions, events, issues and phenomena in the past and present (ACHASSI099)
- Locate and collect relevant information and data from primary and secondary sources (ACHASSI095)
- Sequence information about people's lives, events, developments and phenomena using a variety of methods including timelines (ACHASSI097) (ACHASSI125)

Cross-curriculum Priorities:

Aboriginal and Torres Strait Islander Histories and Cultures

General Capabilities:

- Critical and creative thinking
- Personal and social capability
- Literacy
- Intercultural understanding

ScOT Catalogue Terms:

Composition (Visual Arts), art materials, settings (narratives) art genres, symbols, attitudes, impartiality, idioms, reading comprehension, listening, reasoning, conversations

Higher Order Thinking Skills:

Theory: Bloom's Taxonomy

Levels addressed:

1. **Knowledge** – Exhibits memory of previously learned material by recalling fundamental facts, terms, basic concepts and answers about the selection
2. **Comprehension** – Demonstrates understanding of facts and ideas by organising, comparing, translating, interpreting, giving descriptors and stating main ideas
3. **Application** – Solves problems in new situations by applying acquired knowledge, facts, techniques and rules in a different, or new way
4. **Analysis** – Examines and breaks information into parts by identifying motives or causes. Makes inferences and finds evidence to support generalisations
5. **Synthesis** – Compiles information together in a different way by combining elements in a new pattern or proposing alternative solutions
6. **Evaluation** - Presents and defends opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria

Teacher Lesson Plan

Sidney Nolan - Ned Kelly series

Introduction: (10 minutes)

1. Conduct the pre-lesson pop quiz.
 - Where is the National Gallery of Australia located?
ACT
 - What is Sidney Nolan best known for?
Painting
 - Complete this sentence: Ned Kelly was a famous...?
Bushranger
 - Ned Kelly lived in which part of the world?
Australia
 - Complete this sentence: Ned Kelly was born in the year...?
1855
2. Using the interactive whiteboard, display Sidney Nolan's iconic painting which depicts Ned Kelly riding on his horse through the Australian outback.
3. Generate a class discussion by asking the following questions: Have you ever seen this painting? Who is the figure in this work of art? Where is this figure riding his horse? How do you know this? Who painted this work of art? Allow students to share their ideas, providing reasons for their answers.
4. Students may recognise the figure as Ned Kelly by his black armour. They may also have prior knowledge about the life of Ned Kelly and his activities during the 1800's, as well as being an iconic figure in Australian history. Explain that this artwork is one of 25 works of art in Sidney Nolan's Ned Kelly series gifted to the National Gallery of Australia located in Canberra.
5. Prompting for a show of hands, ask the students whether they have ever visited the National Gallery of Australia. Explain briefly that Sidney Nolan's Ned Kelly series is among the first works of art that you can see as you enter the gallery. Why might that be? What does that tell you about the importance of this story to Australia?

Main Body of Teaching: (40 minutes)

6. Using the interactive whiteboard, students view a small collection of works of art in Nolan's Ned Kelly series. Students are asked to observe each of the paintings and discuss briefly with a partner, who is depicted and what is happening in each.
7. Explain to the students that Nolan's paintings tell the story about Ned Kelly and his gang similar to a **narrative**.
8. Using the interactive whiteboard, students view the YouTube video *Meet Ned Kelly* written by Janeen Brian, illustrated by Matt Adams and uploaded and retold by Renata Posa. This story tells of Kelly's early life and the **events** that led to his **arrest** and eventual death. Students are encouraged to write notes as they view the video, focussing on the **sequence** of main events such as the death at Stringybark Creek, the **siege** at Glenrowen and the trial of Ned Kelly.
9. Upon completion of the story, students conduct the drag and drop activity labelling each of the works of art with a main event from the Ned Kelly story.
10. Explain to the students that although Sidney Nolan's portrayal of the Ned Kelly story is depicted as a narrative, it was never intended as a literal illustration or actual record which will be explored more throughout the lesson. What actual record of these events exist? Research Ned Kelly at the [State Library of Victoria](http://www.slv.vic.gov.au) and the National Library of Australia online.

Teacher Lesson Plan

Sidney Nolan - Ned Kelly series

The National Gallery of Australia's publication Sydney Nolan's Ned Kelly, with essays by Murray Bail and Andrew Sayers, also provide valuable insights into his life. In particular, Sayers links to poetry and literature make for a useful critical literacy study as a supporting lesson.

11. Using the interactive whiteboard, students listen to the NGA video clip ('Deborah Hart Nolan Kelly Series Introduction') which introduces Sidney Nolan's Ned Kelly series and explains the purpose of his paintings.
12. Based on the information in the audio clip, students use the interactive whiteboard to answer the multiple choice questions. See appendix for list of the questions and answers.
13. Students read the information on the interactive whiteboard which introduces the main 'ingredients' of the Ned Kelly series, namely 'Kelly's own words, and Rousseau, and sunlight'.
14. Students explore each of these aspects in more detail by completing the activities on the interactive whiteboard.

Kelly's own words:

Students complete a close activity to gain knowledge about Nolan's influences and his purpose for creating the artworks. This will provide insight into the themes of violence, injustice, love and **betrayal**.

Rousseau:

Task 1 - Students complete a simple drag and drop activity to identify the style of Nolan's paintings.

Task 2 - Students complete a compare and contrast activity to describe Nolan's paintings. Encourage the students to identify the **simplicity** of his works, his use of big and bold forms, the themes of violence and injustice and his depiction of the Australian **landscape**.

Sunlight:

Students view the work of art titled *Ned Kelly 1946* and explore what Nolan meant by the phrase 'a story arising out of the bush and ending in the bush'. Explain that the Australian landscape is a crucial part of Nolan's paintings; the story of Ned Kelly gives meaning to the place.

15. Using acrylic paints, students create a canvas employing the same techniques used by Nolan's style of painting of the Ned Kelly series. These techniques may include his use of colours and images, the black form of Kelly which is found in many of his paintings and horizon perspectives from the Australian landscape. They must create their own interpretation of Nolan's *Ned Kelly 1946* painting. Students can be given time after the lesson to complete this activity.
16. **Extension activity:** Explain to the students that Sidney Nolan's Ned Kelly series depicts an aspect of Australian life during the 1800's. The story of Ned Kelly highlights the violence, perceived injustices and imbalance of power at the time. Using the interactive whiteboard, students read each of the significant events listed at the bottom of the slide: First anti-Chinese legislation passed; Black Wednesday; Great Maritime Strike; Gold found in Ballarat; Eureka Stockade and Women's enfranchisement in South Australia. Students conduct a web search to identify when each of these events occurred and drag and drop each event along the timeline provided.

Teacher Lesson Plan

Sidney Nolan - Ned Kelly series

In groups of 2 or 3, students use a variety of primary and secondary sources to investigate these events in more detail, to determine the living and working conditions for the people living in Australia during this time, both European settlers and Aboriginal and Torres Strait Islander peoples.

Conclusion: 10 minutes

17. Conduct the post-lesson pop quiz using the interactive whiteboard.
 - Sidney Nolan has a collection of paintings known as the Ned Kelly series which was gifted to the National Gallery of Australia in 1977 from Sunday Reed. (**True/False**)
 - Sidney Nolan's main purpose for creating his paintings was to show the historical events of Ned Kelly and his gang. (True/**False**)
 - Sidney Nolan's paintings consisted of stylised images with a vivid of colours. Landscape was a crucial aspect of the Kelly paintings. (**True/False**)
 - Sidney Nolan's Ned Kelly series encompasses Australian history, landscape and European modern art. (**True/False**)
 - The following words and phrases best describe Australian life in the 1800's: Equal opportunity, access to education, optimal working conditions (True/**False**)

Homework Task:

18. Building on from the viewing of *Meet Ned Kelly*, students explore the use of language and how ideas and points of view in texts are conveyed through the use of vocabulary. Janeen Brian uses words and phrases to portray a particular **viewpoint** about the Ned Kelly story.

Activity:

- Ask a parent to view the *Meet Ned Kelly* story on you tube and/or obtain a copy from school or the local library
- Write a list of the words and phrases used by the author to describe her viewpoints/ feelings of the main character, Ned Kelly. For example, '*Ned loved his family and he was brave*', '*Ned held no fear*', '*Ned was fair*' etc
- Write a list of the words and phrases used by the author to develop **empathy** in the reader. For example, '*Then Ned helped a stranger by swapping a horse. It was stolen but Ned didn't know*' etc
- Evaluate whether you think Janeen Brian considers Ned Kelly a hero or a villain. Provide reasons to support your answer
- Conduct research to find information to counteract this viewpoint
- Do you think Ned Kelly was a hero or a villain? Provide reasons to support your answer

GREAT ART IDEAS FOR PRIMARY SCHOOL TEACHERS

DESIGNERS AND BUILDERS: INSPIRED BY THE MEMPHIS DESIGN GROUP

YEAR 4–6

OVERVIEW

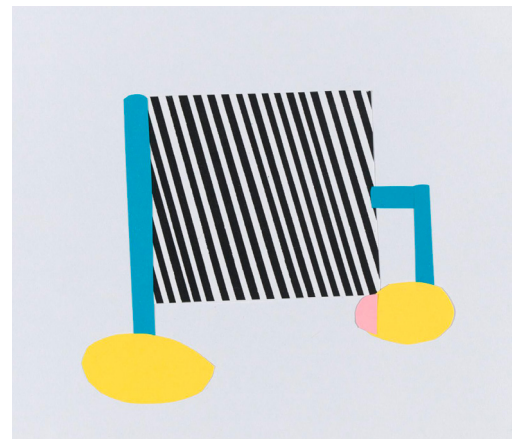
In this project students will explore the role of modernity in design by examining works by the Memphis design group. They will develop their fine motor skills and understanding of shape and measurement by planning and creating a geometric three-dimensional design which reimagines an everyday object.

LEARNING OBJECTIVES

Students will:

- Identify and describe how geometric shapes can be used to express a concept or theme.
- Analyse how colour, pattern and shape interact and enhance our understanding of the artist's intention.
- Plan, refine and create a three-dimensional furniture design inspired by works from the Memphis design group.

STUDENT EXAMPLES



RELATED ARTWORKS



Ettore Sottsass (designer)
Memphis, Milan (manufacturer and retailer)
Carlton room divider 1981
wood, thermosetting laminate, metal, plastic
National Gallery of Victoria, Melbourne
Purchased with the assistance of the National
Gallery Women's Association, 1985



Matteo Thun (designer)
Memphis, Milan (retailer)
Alessio Sarri Ceramiche, Florence (manufacturer)
Pelicanus Bellicosus teapot 1982
earthenware
National Gallery of Victoria, Melbourne
Purchased from Admission Funds, 1991
© Matteo Thun



Matteo Thun (designer)
Memphis, Milan (retailer)
Alessio Sarri Ceramiche, Florence (manufacturer)
Larus marinus teapot 1982
earthenware
National Gallery of Victoria, Melbourne
Purchased from Admission Funds, 1991
© Matteo Thun

DISCUSS

Ettore Sottsass was an Italian architect who established the Memphis design group in 1981 in Milan. The Memphis design group rejected traditional approaches to design and challenged ideas of what was popular or in style at the time. They created furniture and other everyday objects that used unusual forms and shapes in their structure and functionality. Geometric forms and prints, block pop-art colours, use of laminate and a feeling of fun and quirkiness were typically found in the designs. Memphis soon developed a global cult following, and celebrities such as fashion designer Karl Lagerfeld and musician David Bowie acquired hundreds of pieces for their own collections.

Look at the related works and use the following discussion prompts to explore use of geometric shapes and colour with your class:

- What do you notice about these designs? Are these objects functional? *Can you see the figure hidden in Carlton Room Divider, 1981?*
- The works use geometric forms and shapes in unexpected ways. Why do you think the designer chose to use these shapes? How does the shape of the object impact its function? *Consider the use of diagonal lines instead of traditional horizontal and vertical ones.*
- Why did the artist choose these colours? What effect do they create?
- Do you think the works are furniture, sculpture or art? How can you tell if something is a piece of art, an everyday functional object or both?
- Which mathematical skills might you need to design objects like these?
- If you could reinvent an everyday object or piece of furniture from your house which would you choose? Explain why.

RESOURCES & MATERIALS

- A variety of coloured and geometric patterned paper
- Scissors
- Blank white A4 paper
- Sticky tape
- Glue

CREATE

Students design and construct their own furniture piece inspired by the Memphis design group in the following steps:

1. Sketch ideas for a piece of furniture or a household object. *Use geometric shapes in fun and interesting ways.*
2. Consider which components you will create with block colours and which will use patterns.
3. Refine the design and draw a final two-dimensional version of your design. *You can use crayons and paper or digital tools to render your design.*
4. Construct a three-dimensional model of your design using coloured paper, patterns and sticky tape.
Note: If the design contains geometric forms students might like to construct their design from a two-dimensional net.

PRESENT & REFLECT

Students can show their design to the class and display them on shelves or other surfaces.

- Which object or piece of furniture did you choose to reimagine for your design?
- What artistic choices did you make when creating your design?
- How does your design use shape and colour to convey meaning?
- What changes might you make to improve your work?

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GREAT ART IDEAS FOR PRIMARY SCHOOL TEACHERS

SUBURBAN COLLAGES: INSPIRED BY HOWARD ARKLEY'S ACTUAL FRACTUAL

YEAR 5–6

OVERVIEW

In this activity students will develop their understanding of visual conventions and artistic practices in Australian contemporary art by examining *Actual fractual*, 1994, by artist Howard Arkley. They will consider how Arkley represents his chosen subject matter, and how his artwork reflects his perspectives on the suburban environment. They will develop and apply stencilling and collage making skills to plan and create their own artwork and engage in critical thinking to evaluate their own work.

LEARNING OBJECTIVES

Students will:

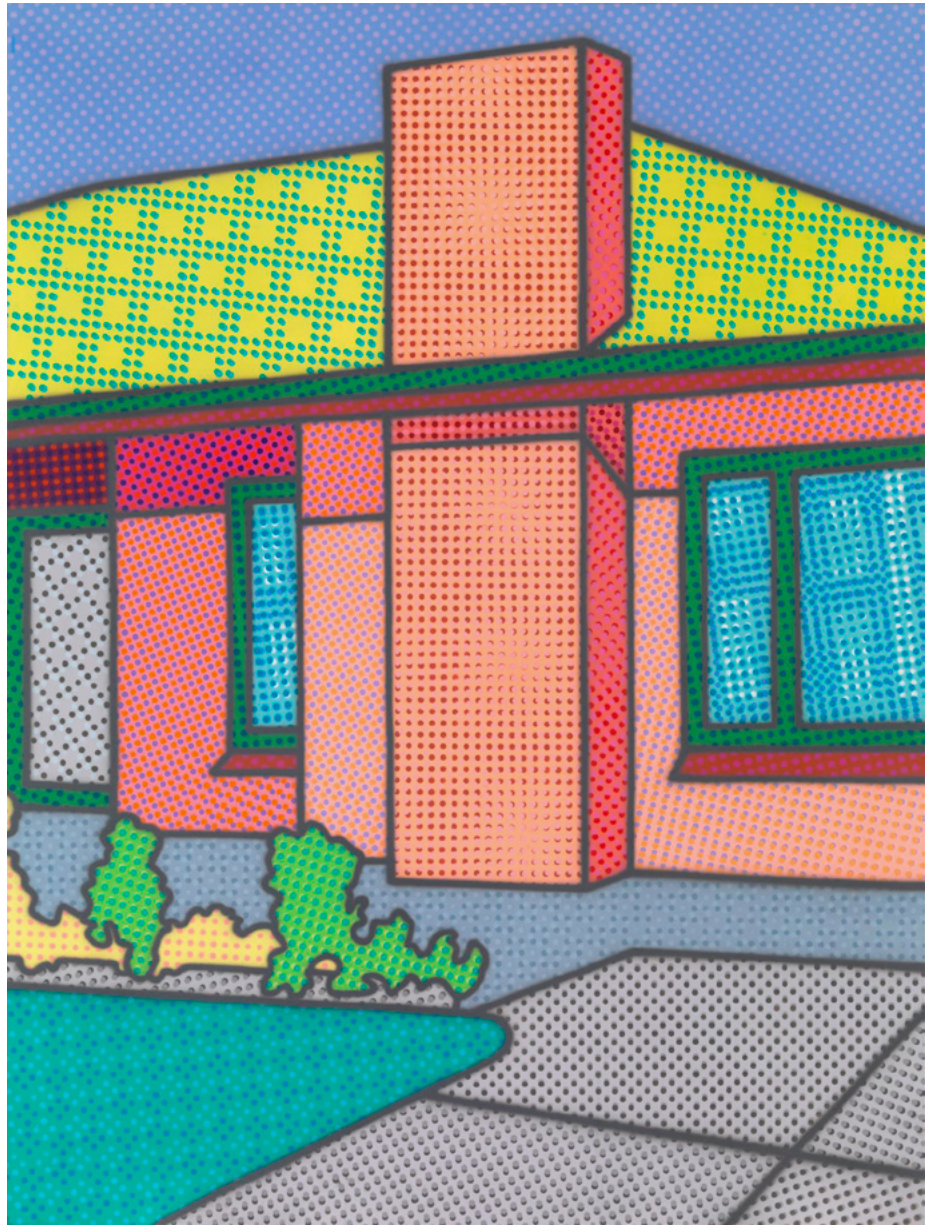
- Examine how Howard Arkley utilises colour, shape and pattern to create a vibrant airbrushed painting of suburban life with a balanced composition.
- Create an artwork which takes inspiration from Howard Arkley's visual arts practice and expresses ideas about suburban life.
- Plan and apply collage making techniques and processes to create a work which depicts the exterior of a typical suburban home.
- Evaluate their own creative process and decision making, and reflect with a partner on how effectively their ideas or feelings have been expressed in their own artwork.

STUDENT EXAMPLES



Created by students at an NGV workshop

RELATED ARTWORK



Howard Arkley

Actual fractual 1994

from the *Pointillist suburb* series 1994

synthetic polymer paint on canvas

202.7 x 152.2 cm

National Gallery of Victoria, Melbourne

Purchased with the assistance of the Fox Family Foundation,
Robert Gould, Carol Sisson, Peter and Anne Greenham, the Peggy
and Leslie Cranbourne Foundation, Richard and Rosemary Raw
and donors to the Arkley Appeal, 2015

© Courtesy of the artist's estate and Kalli Rolfe Contemporary Art

DISCUSS

Howard Arkley is widely recognised as the foremost painter of Australian suburbia. His work blurs the distinctions between high art and pop culture by referencing both art history (for example the Pop Art movement) and the everyday. His signature houses, domestic interiors and fascination with mass culture struck a chord with Australians, who readily identified with his images. He looked for the spectacle in the everyday, unlocking its potential as a vehicle for abstract compositions which explore colour, pattern, shape and line. The humble home was repeatedly reinvented as a vivid psychedelic Pop Art image to capture and hold the gaze of the viewer. Arkley's trademark technique of airbrushing can be seen in *Actual fractual*, 1994, in which he filled in larger areas first before adding smaller details and patterns to the surface using stencils.

Use the following discussion points with an image of Howard Arkley's *Actual fractual*, 1994:

- Compare the work to a photograph of a typical suburban home built in a similar era (the 1980s–90s). How are the two homes similar? How are they different?
- Describe the colours, shapes and patterns in the work. Why do you think the artist chose these colours, shapes and patterns?
- Using too much colour and pattern risks making the work look too busy. How has Howard Arkley maintained balance?
Consider the use of a limited range of patterns and colours, and the way they are placed. The darker tones indicate shadow falling on the surface of the house, suggesting depth.
- What techniques and materials did Arkley use to create this work? Why do you think he chose those techniques and materials?
- How do Arkley's use of materials and techniques affect the way viewers see and understand the work?
Consider the artist's use of an airbrush and stencilling technique and how this relates to Pop imagery.
- Why do you think Howard Arkley chose to paint the house like this? What does this tell us about his perspective on suburban life?

RESOURCES & MATERIALS

- Facade templates – make these by tracing outlines of real estate photographs
- Colour pencils
- Graphite pencils
- A variety of coloured, textured and patterned papers
- Erasers
- Rulers
- Scissors
- Glue
- Thick black markers

CREATE

Students design and create a patterned house inspired by Howard Arkley using the following steps:

1. Make two copies of your facade template.
One will act as a stencil for the collage, while the other will be a master copy for reference as you make your collage.
2. Identify all the key components of the house.
For example, roof, gutters, chimney, walls, window frames and window glass.
3. Consider which components you intend to recreate with flat coloured paper and those which will be filled with patterned paper.
Aim for a balance of flat colour and patterned throughout your facade. Consider how many different colours and patterns you will use and how you will place them throughout your work.
4. Plan your design by lightly shading the components of the house onto your master template using coloured pencils.
*Consider how your choice of colours can communicate feeling – what do you want people to think or feel when they look at your finished artwork?
Don't worry about being too neat for this part, as this is just a plan.*
5. Collect a range of coloured and patterned paper for your collage and choose a piece for the background of the collage.
6. Select a piece of paper for the largest component of your house.
Don't get too fiddly yet. Remember that Howard Arkley always started with bigger, broader areas before adding smaller, finer details.
7. Place the component from your stencil template onto the paper, and trace around it.
8. Carefully cut around the shape and place it onto your background paper.
Don't glue it down just yet.
9. Repeat this process (steps 6–8) for all the components of the house, moving from the largest to smallest sections.
10. When all the pieces have been cut and placed, glue them down onto the background paper.
Refer to the master copy of your facade template to make sure you have placed all the components of the house in the right place.
11. Let your collage dry.
12. Use a thick black marker and a ruler to mark the outlines which separate all the components of the house.

PRESENT & REFLECT

Ask students to share their work with a partner:

- What did you consider when you chose your paper samples?
- Do you think you created a balanced composition? If so, how does your selection of paper create a balanced composition? If not, how could you change your work to improve the balance between colours and patterns?
- What do you hope people will think or feel when they look at your finished artwork?
- Is this a house you would like to live in? Why or why not?

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The NGV warmly thanks Krystyna Campbell-Pretty AM and Family for their support of the NGV School Support Program. The NGV gratefully acknowledges the Packer Family and Crown Resorts Foundations for their support of NGV Kids exhibitions and education programs.



Humanities and Social Sciences (HASS)

What is HASS?

HASS stands for Humanities and Social Sciences. This learning area includes subjects like history, geography and civics and citizenship. It is a good learning area to discuss with your child because it links to the people, places and governments that shape our lives.

There are 10 HASS activities in this book. Each one has:

- Title – to give you an idea of what it might be about.
- Conversation starter – some questions to guide you when you start.
- Activities you can choose from and/or change.
- Definitions that explain important concepts.

Students can do the activities in many different ways. Mix and match them to suit your child's interests or needs.

How do I support my child?

Read through the Conversation Starter questions with your child. It will help them if you talk about the activity before they get started, to help them think about the question. Help them to choose which activities they want to do.

Then children can work independently.

Get together with them again once they have worked through the activity so that they can discuss their thinking with you.

What resources do we need?

The activities are designed to be completed without textbooks or the internet. Of course, if you have other resources they will add to the experience for your child. The internet is a wonderful resource, as are books - pull out your atlas, maps and any reference books that you have at home.

People are a wonderful resource as well, especially older family members who have experienced a rich life and have lived through major events.

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Humanities and Social Sciences

Year 6

1. Events and Memories

What do you need? Find some family photos or use your memory and think about these questions:

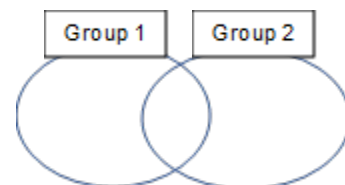
- How does your family remember important memories and events? (e.g. birthdays, anniversaries, holidays, celebrations)
 - How does your community remember important memories and events (e.g. holidays, anniversaries, Glenti, Easter, NAIDOC Week, Territory Day, Ramadan)
- What is the same about family and community celebrations?
- **Talk** and **share** with someone or choose one of your events to draw and write about.
- You could **interview** someone or **research** to find out more about why the event is special.

2. Where do I belong?

- What does 'belong' mean?
- **Draw** a picture of your family or a group you belong to.
- Discuss which other groups you belong to:
 - Who are you friends with?
 - Who makes up your family?
 - What sports or other groups are you in? eg school, band, sports team, language, church
 - Describe one group you belong to: what do they look like, what do they do, why are you in this group, is this group important and why? (Children can **talk**, **write** or **draw**)
- How do you or others know who is in your group? eg uniforms, chants, flags, meeting place
- What is a tradition? eg having special food on your birthday
- What are some of the things that you/your family or groups have as traditions?
- What are some of the things your group does together? Are there things you do every time you meet/come together? eg sing special songs, wear special clothes
- What is the same or different about some of the groups you are in?
- **Draw** a T chart and **write** what is the same/different using a T chart

Similarities	Differences

- or **draw** a Venn diagram with 'what is the same' in the overlapping sections and 'what is different' in the outside sections



3. Waste

What do you need? Empty a rubbish bin carefully onto a big plastic bag outside.

- What is waste?
- What groups could you sort your rubbish into?
- What are the main types of waste in your home?
- Is there good waste and bad waste? Why?

Draw or write a list of the waste you have, **and** what you found out about the waste in your home. If you have a camera take some photos.

- Describe the journey one piece of waste has taken before ending up in the bin.
- What happens to the kitchen waste? Are there other places in the home where waste comes from?
- Does my household – recycle, reduce, reuse and compost the waste? What other ways do we use to get rid of the waste?
- What is one small change I can make or my family can make to reduce waste?

(Make a plan to reduce, reuse or recycle different waste from your home. Start small. This could be a plan for a making a compost bin, setting up a worm farm, getting a container to collect aluminium cans...)

4. Exploring my place

- What does the inside or outside my home look like? How many rooms? How many levels does my home have?

(Draw an inside or outside sketch map of where you live. **Label** your favourite areas on your map or plan. **Tell someone** why they are your favourite places.)

- **Write** some directions for a visitor on how to get to your home.
- Explain to the visitor how to get from one place in the house to another, eg from the kitchen to the bedroom. Try out your directions on someone, who has their eyes covered.
- Did the directions work? If not, make changes. If so, make a new set of directions.

5. My Ideal Island

What do you need? Find a picture of a map with islands on it or imagine your own.

- What is an island?
- What would your ideal island look like? What activities would you be able to do there? What would make it a great place to go?

(Make a list of your favourite things to do, eg fishing, bushwalking, shopping, astronomy, movies, skatepark. **Draw** a map of your island on paper. **Think about** the shape and size. Put your favourite places on your map.)

- What is so good about your island?

(Write an advertisement to persuade someone to visit your ideal island.)

6. Territory Traveller

What do you need? Find a tourist brochure or advertisement for somewhere in the Territory. Your imagination. Parent description.

- Have you been on a recent trip in the Territory or somewhere in Australia? Has someone you know been on a trip and shared their stories?

(**Talk about** where you or they have been and **share some stories** about what you or they did and what happened.)

- What did you like the most and least about the trip? What was a memorable moment or funny story from this trip? **OR**
- If you could go on a trip to anywhere in the Territory, where would you go and what would you like to experience? eg catch a big fish, have a sunset picnic, skate on ice

(**Write a story** or **create a cartoon with words** about a memorable moment/funny story.

{E.g. 1 - The time we went camping at Daly River and we thought we had put out the camp fire. All of a sudden when we were fast asleep it came back to life and all we could see through the tent was a huge yellow/orange glow. What a heart starter that was. E.g. 2 – The time my friend went to the boat ramp, backed the boat down and remembered he forgot to put the bungs in! Never seen him run so fast.}

- Do you remember all the places you have been to in the Territory?

(**Draw** a map of the Territory, showing where you have been. Give your map a title. **Write** a memory/or tell someone what they could do there at each place you have been. Or **Design** a travel brochure/poster showing why this is a great place to visit.)

7. Commemoration

- What does commemoration mean?
- Why do we commemorate as a community, school or family?
- How do we (community, family, you) commemorate significant events such as the Bombing of Darwin Day, Anzac Day and Remembrance Day? (or other events from history that your family believe are significant) eg sometimes we have a public holiday.

(**Write** down some ways we commemorate, eg we wear poppies, rosemary sprigs, wattle flowers, stand silent for a minute, fly flags)

- How do you and your family commemorate a special day or person from history?

(**Design** and **draw** a symbol for a commemoration, eg a poppy **OR Plan** a ceremony of commemoration for you and your family.)

8. Flags and Emblems

What do you need? Find some pictures of flags and/or look at the Australian emblem on a 50c coin or other coin. Your memory or parent description.

- **Conversation starters:** Why are flags/emblems important? What message do they give you about the people who have them? Where have you seen different flags/emblems? (Sometimes emblems are on flags).

(**Write down** where you saw the flags/emblems, eg footy team emblems on the shirts, **Tell someone** what they looked like, eg colours, shapes, designs, size.)

- What would be the best design for a community or your own flag/emblem? What colours or images would you use? Why?

(**Design** and **draw** a flag or emblem. Pick if it will be for the community/home/yours. **Tell someone** the important things about your flag/emblem.)

9 Trivial Pursuit

What do you need? Find a Trivial Pursuit game and look at some questions or you design a new game.

- **Conversation starter:** What do you remember about places you have been?
- What are facts?

(**Write down** as many facts/answers about places. **Write** a question for each fact. You can **make** little question and answer cards. e.g. 1. **Fact** - Katherine River, **Question:** Which river runs through Katherine Gorge?; 2. **Fact** – Uluru, **Question:** What is the name of the biggest rock in Australia?)

- Can someone else help you with facts/questions? Think about how many is enough.
- Find out how to play Trivial Pursuit.
- You could also write the name of the fact on paper. Place above the head. Then you use questions/guesses to find out what it is. Just like celebrity head.

(Time to play trivial pursuit with the family.)

10. Memory Game

- **Conversation starter:** What places have you visited and what are their names? Do you know something about them?

(**Preparing to play** - **Write** down names of places, twice, on small squares of paper, so you have two pieces of paper the same OR make up your own theme such as footy emblems, or animal names – as long as you end up with lots of pairs of cards/paper squares that match.)

Mix your cards up.

(**Playing** - **Put** each card upside down on the table/floor. **Find** your matching pairs by turning two at a time. If no match, turn back over. Try again. Good luck.)

Science

This book has Primary school level science activities for your child. The activities draw from the Australian Curriculum Science standards.

How can I support my child?

Science is all about exploring the world around us - observing, asking questions and seeking explanations. It is important for children to understand that science relies on collecting accurate results and working out what they mean.

Before doing an experiment or making observations, read through the activity with your child. Ask your children what they think will happen and why! Encourage your children to ask questions and make careful observations about what they see, hear and smell. All these science activities can be done at home and do not need specialised science equipment.

Here are some simple family activities that are linked to science.

- Collect and cook bush medicine
- Go for a walk and collect bush tucker that is in season
- Look at the weather forecast and compare it to what is happening outside. Is it raining, windy, sunny? What seasonal winds are blowing?
- Look for freshwater in creeks and trees (not from the tap). Check the tides and look at the moon.
- Look at the stars and tell stories about them.
- Do some exercise and then measure your heartbeat. Compare it to other people's.

Science Year 6: Animal adaptations

Aim: For students to understand that animals have different behaviours and their bodies look different because they live in different places.

Introduction:

Ask children to think of an animal they know a lot about. Ask them to describe the environment in which this animal is found and to discuss all the different features that help their chosen animal to survive in that environment. (i.e: *green tree frog: lives in wet environment. Can swim, is green, can climb due to special feet*). ***Explain that an adaptation is something that helps an animal or plant to survive in their environment.***

Activity 1

Give children the worksheet *What could I be?*

Ask them to identify a plant or animal that each description might apply to

Possible Answers (there are more than these)

- 1) Polar bear
- 2) Bandicoot
- 3) Puffer fish
- 4) Succulent
- 5) Echidna
- 6) Honeyeater
- 7) Cactus
- 8) Wombat
- 9) Giraffe
- 10) Snake
- 11) Cows
- 12) Cheetah
- 13) Duck
- 14) Possum
- 15) Wolf
- 16) Penguins
- 17) Oyster catcher
- 18) Mangrove
- 19) Platypus
- 20) Bear
- 21) Tasmanian Devil

Activity 2: Use the table below and get children to come up with animals and plants that live in the different environments.

DESERT	
Animal/Plant	Special feature(s) or behaviour(s)
<i>Example: camel</i>	Long eyelashes to protect eyes from sand (S) Humps store fat/water (S)

TROPICAL	
Animal/Plant	Special feature(s) or behaviour(s)
<i>Example: Palm tree</i>	Has coconuts (seeds that float) (S)

OCEAN	
Animal/Plant	Special feature(s) or behaviour(s)
<i>Example: Dolphin</i>	Swim in pods/groups (B) Silver colour to help blend in (S)

POLAR	
Animal/Plant	Special feature(s) or behaviour(s)
<i>Example: Penguin</i>	Huddle in groups to stay warm (B) Waterproof feathers (S)

Activity 3:

Introduce the terms 'structural' and 'behavioural' to the children and ask for suggestions about what these words might mean in relation to adaptations.

Structural adaptation: how a plant or animal is 'built' that helps it to survive where they live.

Behavioural: how a plant or animal acts that help them to survive where they live.

Ask the children to look through the lists of adaptations to different environments created earlier in the lesson and sort them according to whether they are behavioural or structural adaptation by writing S or B next to them.

Activity 4:

On the page with the camel, ask children to draw labels to features they think will help it to survive in the desert. Have a look at the answer page together when they are done!

Name: Class: Date:

Lesson 1: What is adaptation?

Worksheet:

What could I be?

I live in a polar region and have white fur. _____

I live in the desert and spend most of the day in a burrow. _____

I live in the ocean and have venomous spines. _____

I grow in the desert and have very fleshy leaves. _____

When an animal attacks me I curl up into a ball. _____

I eat nectar from plants and have a long narrow beak. _____

My leaves and branches are very spiky. _____

My pouch faces backwards. _____

I have a very long neck and eat leaves from the taller trees. _____

I have venom in my fangs. _____

I rest under the shade of bushes during the day. _____

I can move very quickly over short distances. _____

When it gets cold in winter I fly to a warmer climate. _____

I have very sharp claws because I climb trees. _____

I have thick fur to protect me against the cold. _____

My feathers are waterproof. _____

I have a strong, sharp beak. _____

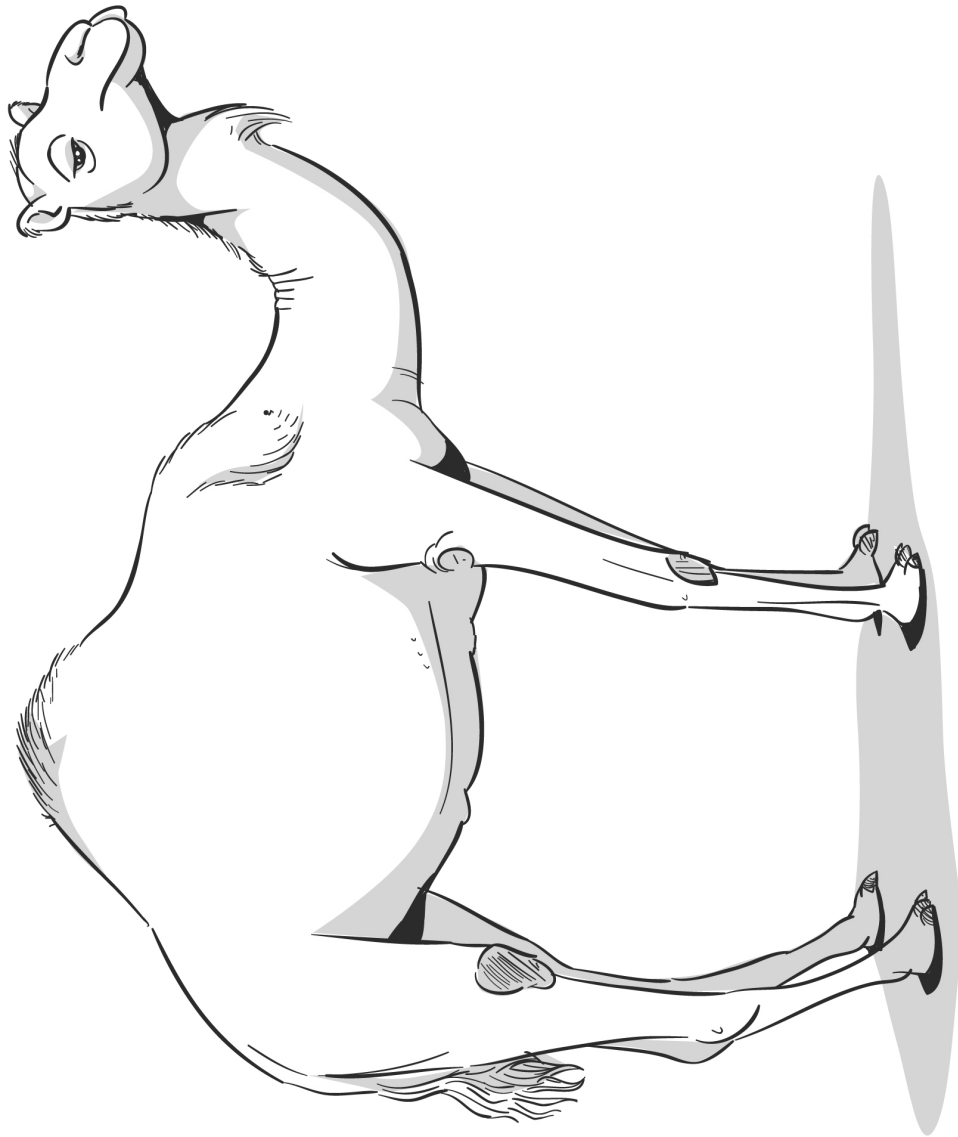
I have a horizontal root system. _____

My feet are webbed. _____

I hibernate in the colder months. _____

I have very powerful jaws. _____

Our ideas



Camel features

Burke and Wills knew they were possibly heading into deserts similar to ones described by previous explorers, with very little water, plants that horses did not like to eat and extreme heat. They chose to take camels with them. What structural features of this camel might help them to survive in a sandy desert of Australia? What about a desert with sharp rocks and lots of tough, spiky plants like the Sturt Desert?





Supporting the **Australian Curriculum: Science Online**

Home > Years 5–6 Unit 2: Survival 3 Kangaroo case study

UNIT 2

Unit
Overview

1 What is
adaptation?

2 Different
adaptations

3 **Kangaroo
case study**

4 Plant adaptation

5 Goyder's Line

Teaching sequence

Lesson objective

In this lesson students identify the physical features of desert and semi-arid regions and develop their understanding of how kangaroos have adapted to suit these environments.

Introduction

Ask students to individually record their ideas on what they think the terms 'desert' and 'semi-arid' mean. Also ask what rainfall, temperatures, sunlight, and environmental features they think are specific to such regions.

Organise students into cooperative learning teams and have them share their ideas as well as identifying the words or phrases the two terms have in common. Use these to develop group definitions.

Share these definitions with the class and look for commonalities. Compare these with definitions from a dictionary or other sources such as the websites listed in Useful links.

Core

1. Explain to the students that they are going to be learning about how the kangaroo has adapted to the desert environment and how it is able to adapt to the changing conditions of this environment in order to survive.

2. Inform students they will be presenting an annotated diagram to demonstrate their understanding.
3. Write the following questions on the whiteboard for the class to see.
 - What structural adaptations do kangaroos have that enable them to survive in a semi-arid environment?
 - What behavioural adaptations do kangaroos exhibit that enable them to survive in a semi-arid environment?
4. Ask the students to share their thinking with a partner then record the class responses.
5. Distribute the worksheet [Kangaroo adaptations](#) to each student. Provide them with time to read through the information and ask any clarifying questions.
6. Engage in a discussion about the text then ask the students to identify the key information they will need to create an annotated diagram of a kangaroo. Discuss the features of a correctly annotated diagram and show them some examples from appropriate reference materials so they have clear expectations.
7. Ask students to complete an annotated diagram showing the structural and behavioural adaptations that enable kangaroos to survive in semi-arid environments and how kangaroos are able to adapt to the changing conditions within this environment.
Teacher note: Instructions on creating annotated diagrams can be found in [Background information](#).

Conclusion

Use the the 4–2–1 strategy, by first recording four phrases or sentences that best sum up how kangaroos adapt to their environment. Request students to then work with another person to reduce this to two sentences or phrases.

Then have them work with another pair to agree on the one sentence that best describes how kangaroos have adapted to their environment and the changing conditions.

Record these outcomes and display in the classroom.

Lesson Resources

Student activities

Worksheets

[Kangaroo adaptations](#) (Word, 427 KB)

Useful links

[Biomes – living worlds. Desert plant adaptations](#) , Oracle ThinkQuest. Information for teachers

M006899 [Extremes: survival in the great deserts of the Southern Hemisphere](#) , NDLRN. Education kit

[Nature notes: Red Kangaroo](#) , Alice Springs Desert Park. Information for students

[Spotlights on biodiversity: desert](#) , Oracle ThinkQuest. Information for students

[The desert biome](#) , University of California. Images and information



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[Accessibility](#)

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Name: Class: Date:

Lesson 3: Kangaroo case study

Worksheet:

Kangaroo adaptations

Kangaroos are found in many different regions of Australia, including the desert and semi-arid regions. Kangaroos from these areas have behavioural and structural adaptations that enable them to survive the harsh conditions.



Kangaroos from desert and semi-arid environments have adapted to drier conditions and have several features that help them deal with the lack of water.

- Kangaroos need very little water to survive. The intestine of the Red Kangaroo reabsorbs water as it passes through which means the kangaroo produces very dry faeces and the little water they have available to them is put to good use by being recycled by their body.
- When they are hot, kangaroos pant to cool down. They also lick their chests and the inside of their forearms until those areas are quite wet. When the moisture evaporates it cools the blood, which circulates close to the surface at these points. This helps keep the animal cool.
- Kangaroos hop over large distances to find food and water. Hopping is a fast, energy efficient way to travel. The kangaroo can cover large distances without using a lot of energy.
- Kangaroos are mostly active in the early morning or evening, when it is cooler. During the day, when the temperature is most extreme, kangaroos spend the time lazing around under the shade of trees.
- The female kangaroo's efficient breeding cycle also assists them in surviving the harsh environment. They have the ability, when pregnant, to put the growth of the embryo on hold until external conditions improve. This increases the chances of the young surviving. In times of drought, many kangaroos will die but when conditions are good female kangaroos can have three young ones with them at the same time: one as an embryo (not yet born), one in the pouch attached to a teat and one outside the pouch but still drinking the mother's milk.

References

'[Nature notes – Red Kangaroo](http://www.alicespringsdesertpark.com.au/kids/nature/mammals/kangaroo.shtml)', Alice Springs Desert Park website, <http://www.alicespringsdesertpark.com.au/kids/nature/mammals/kangaroo.shtml> (2013)

'[Australian kangaroos – an outback icon](http://www.outback-australia-travel-secrets.com/australian-kangaroos.html)', Outback Australia travel guide website, <http://www.outback-australia-travel-secrets.com/australian-kangaroos.html> (2013)

INVISIBLE INK

The brief

Write your own secret message in an invisible ink solution.

The method

1. Squeeze lemon juice into the bowl and add a few drops of water. Stir with the spoon.
2. Dip the paint brush into the juice mixture and write a message on the paper.
3. Allow the paper to dry completely. Your message should become invisible.
4. Hold the paper very close to the light bulb to heat up the message area (adult supervision required). Watch your message appear.

Materials

-
A lemon
-
A bowl
-
Water
-
A spoon
-
A paint brush
-
A lamp, or other light bulb



How does it work?

The lemon juice is an organic substance which reacts with oxygen in the surrounding air, oxidises and turns brown. By placing the paper right next to the lamp we speed up the oxidation process. The heat from the lamp causes the chemical bonds to break down.

Did you know?

Oxidation affects lots of different surfaces, from metal to living tissue. A freshly-cut apple that turns brown, a bicycle that becomes rusty or a copper penny that turns green. Not all oxidation is bad – but think about choosing the right materials when designing a product for a particular use.



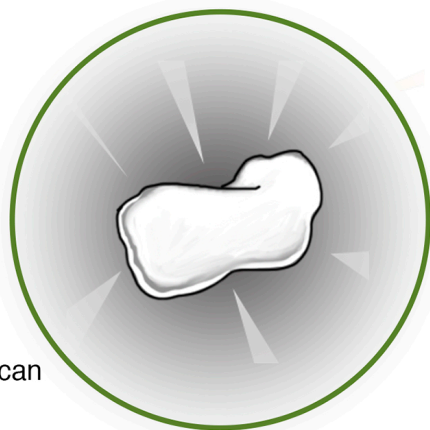
MAKE PLASTIC MILK!

YOU WILL NEED:

- One cup of milk
- 4 teaspoons of white vinegar
- A bowl
- A strainer
- Adult help

WHAT TO DO

1. Ask your friendly adult to heat up the milk until it is hot, but not boiling
2. Now ask the adult to carefully pour the milk into the bowl
3. Add the vinegar to the milk and stir it up with a spoon for about a minute
4. Now the fun part, pour the milk through the strainer into the sink – careful it may be hot!
Left behind in the strainer is a mass of lumpy blobs.
5. When it is cool enough, you can rinse the blobs off in water while you press them together .
Now just mold it into a shape and it will harden in a few days. – Cool!



HOW DOES IT WORK?

Plastic? In milk? Well, sort of. You made a substance called CASEIN. It's from the latin word meaning "cheese." CasEin occurs when the protien in the milk meets the acid in the vinegar. The casein in milk does not mix with the acid and so it forms blobs. True plastics, called poymers, are a little different. If you want to make a true plastic and learn more about polymers, try the Homemade Slime experiment. Have fun!

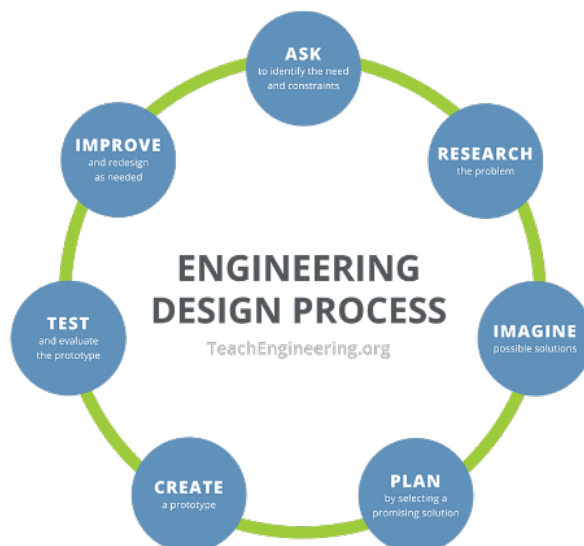
MAKE IT AN EXPERIMENT:

The project above is a DEMONSTRATION. To make it a true experiment, you can try to answer these questions:

1. Will more vinegar make more casein?
2. Will you get the same results with low-fat milk, soy milk?
3. Do all types of vinegar work?
4. Will other acids, such as lemon juice and orange juice work?

Science, technology, engineering and maths (STEM)

STEM stands for Science, Technology, Engineering and Mathematics. This learning area allows children to use science and maths to solve real world problems. In STEM we use an inquiry process, as shown in this diagram.



How can I support my child?

Encourage your child to **ask questions**. Help them to find a problem they can solve.

Research the problem. Help them to find out more about it.

Brainstorm and **imagine** possible solutions. Help them to write these down, encourage them to draw a picture or a diagram of their ideas.

Create a **plan** to make one solution. Help them to make their plan, discuss, read through it with them.

Create a model (prototype) of their solution. Help them to find materials that they need.

Test and evaluate the model and improve the model as needed. Run through it with them, take photos, suggest changes.

Make sure that there are **constraints** on the activity. Constraints might be a time limit on how long children have to make something, or how much equipment they can use. This will keep the problem to a size and scope that children can manage.

Find simple problems at home that your children can solve. Here are some ideas:

- The best way to clean the kitchen
- How to stop animals from coming inside the house
- How to stop ants and flies from getting into the rubbish bin
- How to pack the car so that everyone can fit in

DATTA Vic Design Challenge



Winbo Industrial Co Bent Bear Lunchbox

Design a lunch container

Students get very bored eating sandwiches every day – it would be great to have other options of hot or cold food, but it is difficult to keep these foods safe to eat. Design a lunch container that teenagers would like to use, that is flexible for different types of food, and that keeps food at a safe temperature.

List 5 things that your design must do or be like for it to be a success.

- 1.
- 2.
- 3.
- 4.
- 5.

Development sketches of your ideas

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Final Design

What materials would it be made from?

Explain the best features of your final design

User profile

Teenage students – what are they like and what do they like?

DATTA Vic Design Challenge

Re-design a play tent

Play tents are very often styled to be like castles or towers for little princes and princesses. Can you design a new play tent for children that has a very different theme, for example – futuristic, jungle or the circus.

Puregadgets@Fairly Princess Tale Castle



List 5 things that your design must do or be like for it to be a success.

- 1.
- 2.
- 3.
- 4.
- 5.

Development sketches of your ideas

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Your theme

Final Design

What materials would it be made from?

Explain the best features of your final design

User profile

Pre-school children – what are they like and what do they like?