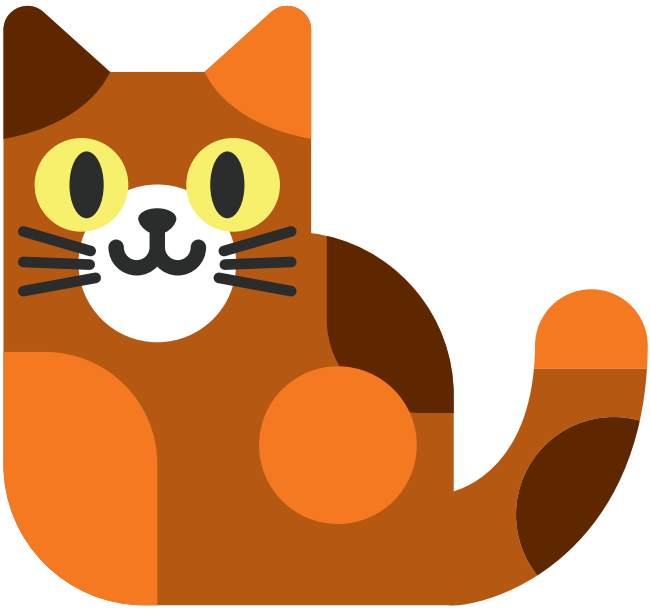
# Edu.Cat
STEM Challenge

# Level 1B
## Teacher Guide:
## Kittens Growing Up



TenLives

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email edu.cat@tenlives.com.au

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# About Ten Lives

Ten Lives is a leader in cat management and operates Tasmania's largest cat shelter taking into our care all lost, stray, unwanted, wild and feral cats. Ten Lives receives no government funding and relies on funds generated from our own operations and the support of the general community through donations and bequests.

Operating for over seventy years Ten Lives has cared for tens of thousands of cats and kittens. In kitten season we have on average one cat or kitten coming into our care every 30 minutes during our 7 day a week operation.

By changing the way we collectively care for cats, we are benefiting not only cats but also members of our community and the environment.

Ten Lives has an independent board and has a professional and dedicated team that ensure Ten Lives is a sustainable organisation for the long term.

Ten Lives objectives are:

- To promote and improve the welfare of cats and kittens.
- To promote responsible cat ownership and humane animal welfare principles.
- To shift public attitude towards the welfare of their cats in order to reduce the number of stray, abandoned, lost, unwanted or feral cats.
- To provide education throughout schools and the general public to create positive outcomes for cats, the environment and communities.
- To reduce unnecessary euthanasia of cats and kittens.

Ten Lives promotes responsible cat ownership and all cats adopted are microchipped, de-sexed, vaccinated and have received all necessary veterinary care.

Ten Lives works with all levels of government, community groups, education and research institutions, conservation groups and business.

Ten Lives believes that education is key to creating long term social change in the way we care for our cats, the community and our environment.

Ten Lives

# About Edu.Cat

**Edu.Cat** is an Australian-first STEM education program focusing on issues surrounding cat welfare, cat management and the positive and negative impact cats have on individuals, communities and wildlife. The subject matter of the program (cats) is tangible and appealing to students whilst the presentations, STEM challenges and additional work book activities engage students in areas of Science, Technologies, Engineering and Mathematics, inspiring students in these fields and empowering them to make positive choices in cat ownership.

**Edu.Cat**, developed in Tasmania by Ten Lives is available to all schools. The program includes Australian Curriculum - linked unit plans for Kinder to Year 6.

As students progress through the program they engage in new and exciting inquiry-based learning and STEM Challenges to build on information they have learnt in previous years.

Ten Lives can provide teachers with supporting resources: Teacher Guides, Students Books, STEM Challenges and additional activities linked to the Australian Curriculum and the Early Years Learning Framework.

All **Edu.Cat** curriculum-linked presentations are tailored to the needs of individual classes which is highly desirable for teachers, as well as being engaging for all students.

Enquiries can be made for kittens to attend Edu.Cat sessions as an additional component to the program, subject to availability.

Ten Lives also offers schools the opportunity to book a behind the scenes tour of Ten Lives, Tasmania's largest cat shelter.

**Edu.Cat** paves the way for students to:

- **inquire**
- **problem solve**
- **design**
- **create**
- **evaluate**
- **work as a team**
- **innovate**
- **be inspired**
- **participate in interactive learning**
- **engage in STEM**



# Ten Lives Edu.Cat STEM Challenge

## Kinder to Year 6

## The Big Question: What is responsible cat ownership? (Welfare, Environment and Community)

**Background Information: Foundations of STEM (Science, Technologies, Engineering, Maths)**

STEM education is a term used to refer collectively to the teaching of the disciplines within its umbrella - Science, Technologies, Engineering and Mathematics.

Today's students need to acquire core subject knowledge as well as the skills of collaboration, critical thinking, creativity and problem solving - and STEM education has a crucial role in achieving this.

International research shows that building STEM capacity across the population is critical in helping to support innovation and productivity regardless of occupation or industry. Consistent with this research, industry surveys show that STEM literacy is increasingly becoming part of the core capabilities that Australian employers need. (National STEM School Education Strategy 2016 - 2026)

STEM education is an interdisciplinary approach to learning where rigorous academic concepts are coupled with real-world lessons as students apply Science, Technologies, Engineering, and Mathematics in contexts that make connections between school, community and work... (Tsupros, N., R. Kohler, and J. Hallinen, 2009)

Edu.Cat is committed to contributing to the way in which Tasmanian students experience STEM fields. The Edu.Cat program paves the way for students to collaborate, inquire and problem solve within their school community.

# Level 1B STEM Challenge Overview

STEM Challenge - In groups, students draw, design and construct a model of a cat using materials that reflect the function of its body parts.

Note to Teachers: STEM activities are designed to fit into existing Science Units. Not all units are compulsory.

| | Guiding Questions | Resources Required | Learning Intentions |
|---|---|---|---|
| **Presentation** | • Kittens Growing Up | • Presentation by Ten Lives Cat Centre.<br>• Require a screen/board.<br>• Space in classroom for a game | • Students learn about the main elements of caring for cats: vaccination, desexing and microchipping. |
| **Activity 1** | • What is the structure and function of living things?<br>• Sketch a cat. | • A selection of photos, videos and graphics of several different living things (cat being one example). | • Students recall living things have external features by producing a sketch of a cat. |
| **Activity 2** | • How can you make your sketch of a cat look more realistic?<br>• Ask students to focus on relative sizes, lengths and position of body parts. | • Photos/videos of a range of cats, some labelled with key features and body parts.<br>• Watch how cats move, eat, sleep etc.<br>• Plain paper, grey leads and a selection of coloured pencils. | • Students create a more detailed scientific sketch of a cat and label the body parts/features and describe what materials they need to construct the model. |
| **Activity 3** | • Students use their scientific diagram to create an accurate model of a cat.<br>• How can the materials used to make your cat tell us about what the feature does e.g. fur to keep warm?<br>• Look at textures, colours and patterns when observing cats. | • A selection of recycled and natural materials such as fabric scraps, velvet, felt, satin, coloured pens, glue, tape, gum nuts, sticks, plastic bottles, toilet paper rolls, newspaper, cardboard boxes etc. | • Students create a list of why they chose the materials for each feature.<br>• Students construct a model of a cat with materials that reflect its body parts e.g. fabric for fur, gum nuts for eyes. |

**Success Criteria - Evidence of work**

1. Students will have drawn an accurate drawing of a cat.
2. Students will have created a scientific drawing of a cat with at least six features labelled.
3. Students will have created a model of a cat using appropriate materials to demonstrate its features.

# STEM Challenge Part 1
# Fantastic cat features

**STEM Challenge Part 1 of 3**

**Task:** To create a draft of a drawing of a cat. (Use Template 1 (page 36) at back of document)

**Time 30 minutes**

**Learning intentions for STEM Challenge Part 1 From ACF Years 1 & 2 descriptions**

Students demonstrate knowledge and understanding that all living things share the same basic needs and identify how living things meet their needs in the places they live by producing a scientific diagram of a cat.

**Success criteria**

Students will have produced an accurate drawing of a cat and a statement of what the feature is used for e.g. eyes for seeing well.

**Knowledge and Understanding - Australian Curriculum**

<table>
<tr><th colspan="3">Science</th></tr>
<tr>
<td>Science Understanding<br>Sub-strand: Biological Sciences<ul><li>Students identify the basic needs of plants and animals, including air, water, food or shelter, and describe how the places they live meet those needs.</li><li>AC9S1U01 Year 1</li></ul></td>
<td>Science Inquiry<br>Sub-strand: Planning and conducting<ul><li>Make and record observations, including informal measurements, using digital tools as appropriate.</li><li>AC9S2103 Year 2</li></ul></td>
<td>Science Inquiry<br>Sub-strand: Evaluating<ul><li>Compare observations with predictions and others' observations, consider if investigations are fair and identify further questions with guidance.</li><li>AC9S2105 Year 2</li></ul></td>
</tr>
<tr><th colspan="3">Maths</th></tr>
<tr><td colspan="3">Number<ul><li>Use mathematical modelling to solve practical problems involving equal sharing and grouping; represent the situations with diagrams, physical and virtual materials, and use calculation strategies to solve the problem.</li><li>AC9M1N06 Year 1</li></ul></td></tr>
<tr><th colspan="3">Technologies</th></tr>
<tr><td colspan="3">Technologies<br>Sub-strand: Generating and Designing<ul><li>Generate and communicate design ideas through describing, drawing or modelling, including using digital tools.</li><li>AC9TDE2P01 Years 1 & 2</li></ul></td></tr>
</table>

<table>
<tr><th colspan="2">General Capabilities</th></tr>
<tr><td>Personal & Social Capability: Expanding students' capacity to question, solve problems, explore and display curiosity. Students use their scientific knowledge to make informed choices about issues that impact their lives such as environmental change, and consider the application of science to meet a range of personal and social needs.</td><td>Critical and Creative Thinking: Creative thinking enables the development of ideas that are new to the individual, and this is intrinsic to the development of scientific understanding.<br>Scientific inquiry promotes critical and creative thinking by encouraging flexibility and open-mindedness as students speculate about their observations of the world and the ability to use and design new processes to achieve this. Students' conceptual understanding becomes more sophisticated as they actively acquire an increasingly scientific view of their world and the ability to examine it from new perspectives.</td></tr>
<tr><td>Literacy: By learning the literacy of science, students understand that language varies according to context and they increase their ability to use language flexibly. Scientific vocabulary is often technical and includes specific terms for concepts and features of the world, as well as terms that encapsulate an entire process in a single word, such as 'photosynthesis'.<br>Language is therefore essential in providing the link between the concept itself and student understanding and for assessing whether the student has understood the concept.</td><td>Numeracy: Many elements of numeracy are evident in the Australian Curriculum: Science, particularly in Science Inquiry Skills. These include practical measurement and the collection, representation and interpretation of data from investigations.</td></tr>
<tr><td colspan="2">Ethical Understanding: They explore what integrity means in science, and explore and apply ethical guidelines in their investigations. They consider the implications of their investigations on others, the environment and living organisms.<br>They use scientific information to evaluate claims and to inform ethical decisions about a range of social and environmental issues, including the treatment of animals.</td></tr>
</table>

### Key inquiry questions

What external features help cats to exist and survive in any environment?

Are the features of other animals similar or different?

How do cats use their tails?

What is special about a cat's eyes?

Why do cats have barbs (spikes) on their tongues?

### Resources

- A selection of photos or graphics showing several different living things including a cat (bird, snake, sheep etc.)
- Picture of a cat with features labelled provided in student workbook.

### STEM Challenge - teaching and learning activity

### Whole class teaching:

- Students recall the features of a cat and facts about those features.
- Share the picture of a cat with features labelled.
- Ask students to decide what are the most important features of cats, then discuss.
- Once discussion starts to slow down, move to the images or graphics of other living things. Discuss their features and ask if they have similar features.
- Notice the size and the shapes of the body parts in relation to the whole animal.
- Students then draw a scientific diagram of a cat and label the most important features.

### Vocabulary:

Features-all living things have different body parts that help them survive and are unique to their type




duben/123RF

# STEM Challenge Part 2
# Fantastic cat features

**STEM Challenge Part 2 of 3**

**Task:** To produce a second draft of an accurate diagram of a cat with its features, (Use Template 2 (page 37) at back of document) at least six labelled and a brief description of what the feature is used for.

**Time 30 minutes**

**Learning intentions for STEM Challenge Part 2**

Students demonstrate their knowledge of a cat by producing a second draft of an accurate scientific diagram of a cat with its features.

**Success criteria**

A second draft of an accurate drawing of a cat with at least 6 labelled features and a statement of what the feature is used for e.g. eyes for seeing well.

**Knowledge and Understanding - Australian Curriculum**

<table>
<tr><th colspan="3">Science</th></tr>
<tr>
<td>Science Inquiry<br>Sub-strand: Planning & conducting<ul><li>Make and record observations, including informal measurements, using digital tools as appropriate.</li><li>AC9S1I03 Year 1</li></ul></td>
<td>Science Inquiry<br>Sub-strand: Evaluating<ul><li>Compare observations with predictions and others' observations, consider if investigations are fair and identify further questions with guidance.</li><li>AC9S1I05 Year 1</li></ul></td>
<td>Earth & Space sciences<br>Sub-strand: Chemical sciences<ul><li>Students recognize that materials can be changed physically without changing their material composition and explore the effect of different actions on materials including bending, twisting, stretching and breaking into smaller pieces.</li><li>AC9S2U03</li></ul></td>
</tr>
<tr><th colspan="3">Maths</th></tr>
<tr>
<td colspan="3">Space<ul><li>Recognise, compare and classify shapes, referencing the number of sides and using spatial terms such as 'opposite', 'parallel', 'curved' and 'straight'.</li><li>AC9M2SP01 Year 2</li></ul></td>
</tr>
</table>

<table>
<tr><th colspan="2">Technologies</th></tr>
<tr><td>Processes & Production Skills<br>Sub-strand: Producing and implementing<ul><li>Use materials, components, tools, equipment and techniques to safely make designed solutions.</li><li>AC9TDE2P02 Years 1 & 2</li></ul></td><td>Processes & Production Skills<br>Sub-strand: Collaborating & managing<ul><li>Sequence steps for making designed solutions cooperatively.</li><li>AC9TDE2P04 Years 1 & 2</li></ul></td></tr>
<tr><th colspan="2">General Capabilities</th></tr>
<tr><td>Personal & Social Capability: Expanding students' capacity to question, solve problems, explore and display curiosity. Students use their scientific knowledge to make informed choices about issues that impact their lives such as environmental change, and consider the application of science to meet a range of personal and social needs.</td><td>Critical and Creative Thinking: Creative thinking enables the development of ideas that are new to the individual, and this is intrinsic to the development of scientific understanding.<br>Scientific inquiry promotes critical and creative thinking by encouraging flexibility and open-mindedness as students speculate about their observations of the world and the ability to use and design new processes to achieve this. Students' conceptual understanding becomes more sophisticated as they actively acquire an increasingly scientific view of their world and the ability to examine it from new perspectives.</td></tr>
<tr><td>Literacy: By learning the literacy of science, students understand that language varies according to context and they increase their ability to use language flexibly. Scientific vocabulary is often technical and includes specific terms for concepts and features of the world, as well as terms that encapsulate an entire process in a single word, such as 'photosynthesis'.<br>Language is therefore essential in providing the link between the concept itself and student understanding and for assessing whether the student has understood the concept</td><td>Numeracy: Many elements of numeracy are evident in the Australian Curriculum: Science, particularly in Science Inquiry Skills. These include practical measurement and the collection, representation and interpretation of data from investigations.</td></tr>
<tr><td colspan="2">Ethical Understanding: They explore what integrity means in science, and explore and apply ethical guidelines in their investigations. They consider the implications of their investigations on others, the environment and living organisms.<br>They use scientific information to evaluate claims and to inform ethical decisions about a range of social and environmental issues, including the treatment of animals.</td></tr>
</table>

### Resources

- Photos/videos of a variety of cats to show how cats move, eat, sleep etc.
- Photos of student models of cats for inspiration.
- Plain paper, grey leads and a selection of coloured pencils.
- Search Pinterest Inquisitive/Twinkl for ideas for a 3D model cat

### STEM Challenge - teaching and learning activity - Whole class teaching:

- Watch videos of cats moving, eating, sleeping and discuss shapes.
- Recall how cats feel - think of all features e.g. sharp claws, soft fur, padded feet etc.
- Explain you will be constructing a model of a cat and discuss what materials would best represent these features e.g. body covered in a soft material.
- Ask students to relate the structure (has) to the function (does) of the feature e.g. soft, thick fur keeps cats warm and protects their skin.
- Students recall their scientific diagram of a cat. Encourage a second draft to make it as realistic as possible. Ask students to describe the materials they will use for each feature.
- Provide a list of materials you will bring to class. Students can source their own from home (we suggest reused/recycled materials only to avoid costs and encourage creativity).

### Vocabulary list

Structure - How body parts are arranged on a living thing.

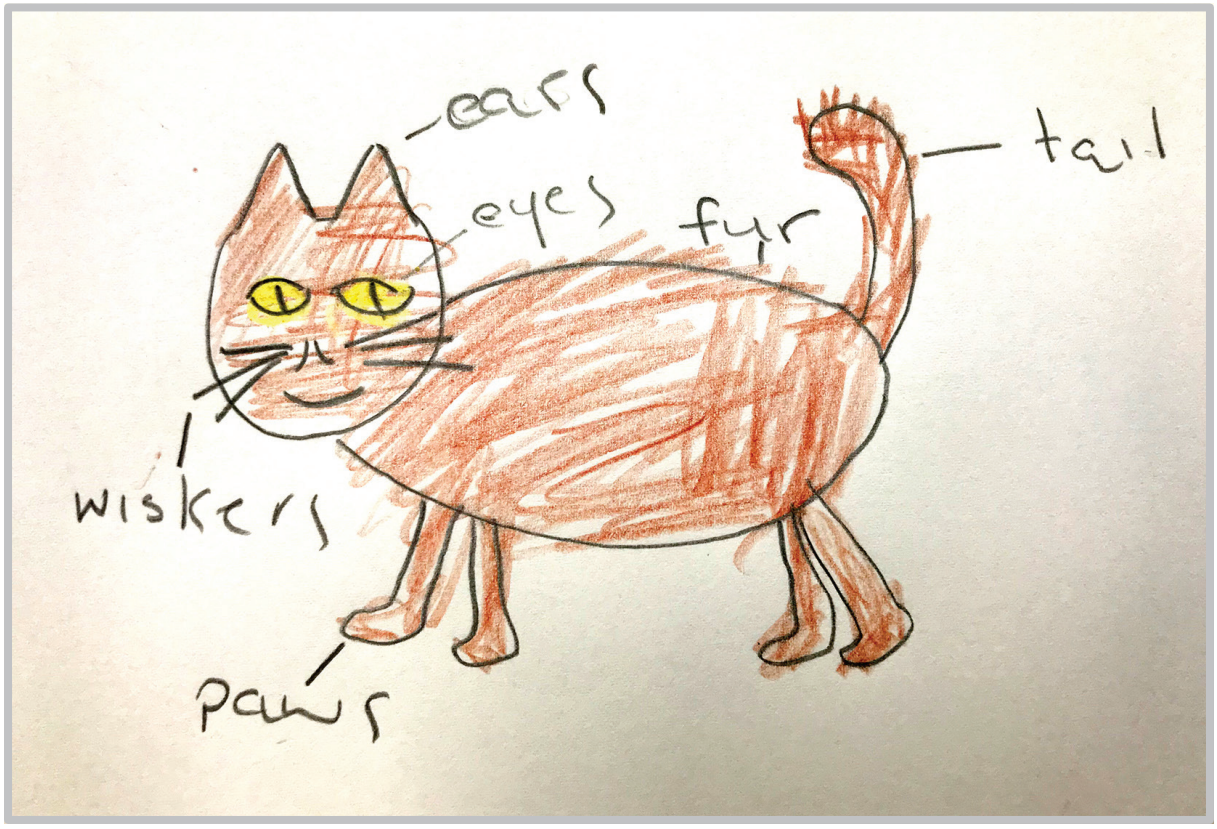
Function - The role of each body part.

### Key inquiry questions

How can you make your sketch of a cat look more realistic?

Ask students to focus on relative sizes, lengths and position of body parts.

What materials will best represent the structure and function?



# STEM Challenge Part 3
# Fantastic cat features

**Challenge number** Part 3 of 3

**Task:** Students use their scientific diagram to create an accurate model of a cat. (Use Template 3 (page 38) at back of book). Students can write down why they chose the materials they did e.g. I chose green buttons because cats have green eyes.

**Time** 60 minutes

### Learning intentions for STEM Challenge Part 3

Students construct an accurate model of a cat with materials that reflect its body parts e.g. fabric for fur, round gumnuts for eyes, demonstrating their knowledge and understanding of features and materials.

Students display their cats and diagrams for the whole school to see in an assembly or school community event to share their knowledge and learning.

### Success criteria

Students will have created an accurate model of a cat or kitten showing the features from their drawing and materials which accurately reflect that feature e.g. round or oval buttons for eyes. An oral or written reasoning of the materials used in relation to the feature e.g. a cat's eyes are round or oval in shape.

### Knowledge and Understanding - Australian Curriculum

<table>
<tr><th colspan="2">Science</th></tr>
<tr><td>Science as a Human Endeavour<br>Sub-strand: Use and influence of science<ul><li>Students describe how people use science in their daily lives, including using patterns to make scientific predictions.</li><li>AC9S2H01 Year 2</li></ul></td><td>Science Inquiry<br>Sub-strand: Communicating<ul><li>Students write and create texts to communicate observations, findings and ideas, using everyday and scientific vocabulary.</li><li>AC9S1I06 Year 1</li></ul></td></tr>
<tr><th colspan="2">Maths</th></tr>
<tr><td colspan="2">Number<ul><li>Use mathematical modelling to solve practical problems involving equal sharing and grouping; represent the situations with diagrams, physical and virtual materials, and use calculation strategies to solve the problem.</li><li>AC9MIN06 Year 1</li></ul></td></tr>
</table>

<table>
<tr><th colspan="2">Technologies</th></tr>
<tr><td>Process and production skills<br>Sub-strand: Generating & Designing<ul><li>Students generate and communicate design ideas through describing, drawing or modelling, including using digital tools.</li><li>AC9TDE2P01 Years 1 & 2</li></ul></td><td>Process and production skills<br>Sub-strand: Evaluating<ul><li>Evaluate the success of design ideas and solutions based on personal preferences and including sustainability</li><li>AC9TDE2P03 Year 1 & 2</li></ul></td></tr>
<tr><th colspan="2">General Capabilities</th></tr>
<tr><td>Personal & Social Capability: Expanding students' capacity to question, solve problems, explore and display curiosity. Students use their scientific knowledge to make informed choices about issues that impact their lives such as environmental change, and consider the application of science to meet a range of personal and social needs.</td><td>Critical and Creative Thinking: Creative thinking enables the development of ideas that are new to the individual, and this is intrinsic to the development of scientific understanding.<br>Scientific inquiry promotes critical and creative thinking by encouraging flexibility and open-mindedness as students speculate about their observations of the world and the ability to use and design new processes to achieve this. Students' conceptual understanding becomes more sophisticated as they actively acquire an increasingly scientific view of their world and the ability to examine it from new perspectives.</td></tr>
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</table>

### Resources

- A selection of recycled and natural materials such as fabric scraps, velvet, felt, satin, coloured pens, glue, tape, gumnuts, sticks, plastic bottles, old paper tubes, cardboard boxes etc.
- Search Pinterest Inquisitive/Twinkl for ideas for a 3D model cat

### STEM Challenge - teaching and learning activity

- Provide photos or other samples for inspiration. Look at textures, colours and patterns when observing cats.
- Students work independently to construct their model of a cat or kitten and accompanying explanation.
- Those students finished early can liaise with the teacher on the best way to display their cats and kittens as a family group showing reproduction and offspring. Create a sign, poster or a talk to build awareness of problems learnt from this project.

### Key inquiry questions

Why did you choose to make your cat or kitten using those materials e.g. fluffy material to look like fur to keep the cat warm?

### Vocabulary

Model - a three dimension representation of a person, thing or animal. Usually on a smaller scale.





# Activity 1:

# Learn how cats have adapted over time to become pets (Guided Reading activity)

**Task:** use the following texts and Guided Reading strategies to develop student understanding

**English**

**1. Strand: Literacy**

**Sub-strand: Analysing, interpreting and evaluating**

- Students describe some similarities and differences between imaginative, informative and persuasive texts.
- AC9E1LY03 Year 1

**2. Strand: Literacy**

**Sub-strand: Analysing, interpreting and evaluating.**

- Students use comprehension strategies such as visualizing, predicting, connecting, summarizing and questioning when listening, viewing and reading to build literal and inferred meaning by drawing on vocabulary and growing knowledge of context and text structures.
- AC9E1LY05 Year 1

**3. Strand: Language**

**Sub-strand: Language for interacting with others**

- Students investigate how interpersonal language choices vary depending on the context, including the different roles taken on in interactions.
- AC9E2LA02 Year 2

**4. Strand: Literacy**

**Sub-strand: Analysing, interpreting and evaluating**

- Students use comprehension strategies such as visualizing, predicting, connecting, summarizing, monitoring and questioning to build literal and inferred meaning.
- AC92CE2LY05 Year 2

## Text 1

# Once upon a time all cats around the world were wild



## How did cats become pets?

When people started to grow food on farms in places in and around Africa, mice and rats began to live on the farms to eat the food.

Wild cats started to live near the farms to catch the mice and rats.

People really liked the wild cats catching the mice and rats, as this helped keep their food safe.

Thousands of years later some wild cats became friendly with people and started to live in their homes.

The people in Egypt liked pet cats so much they would not let anyone take them away from Egypt to other countries. (Continued on page 18 & 19).



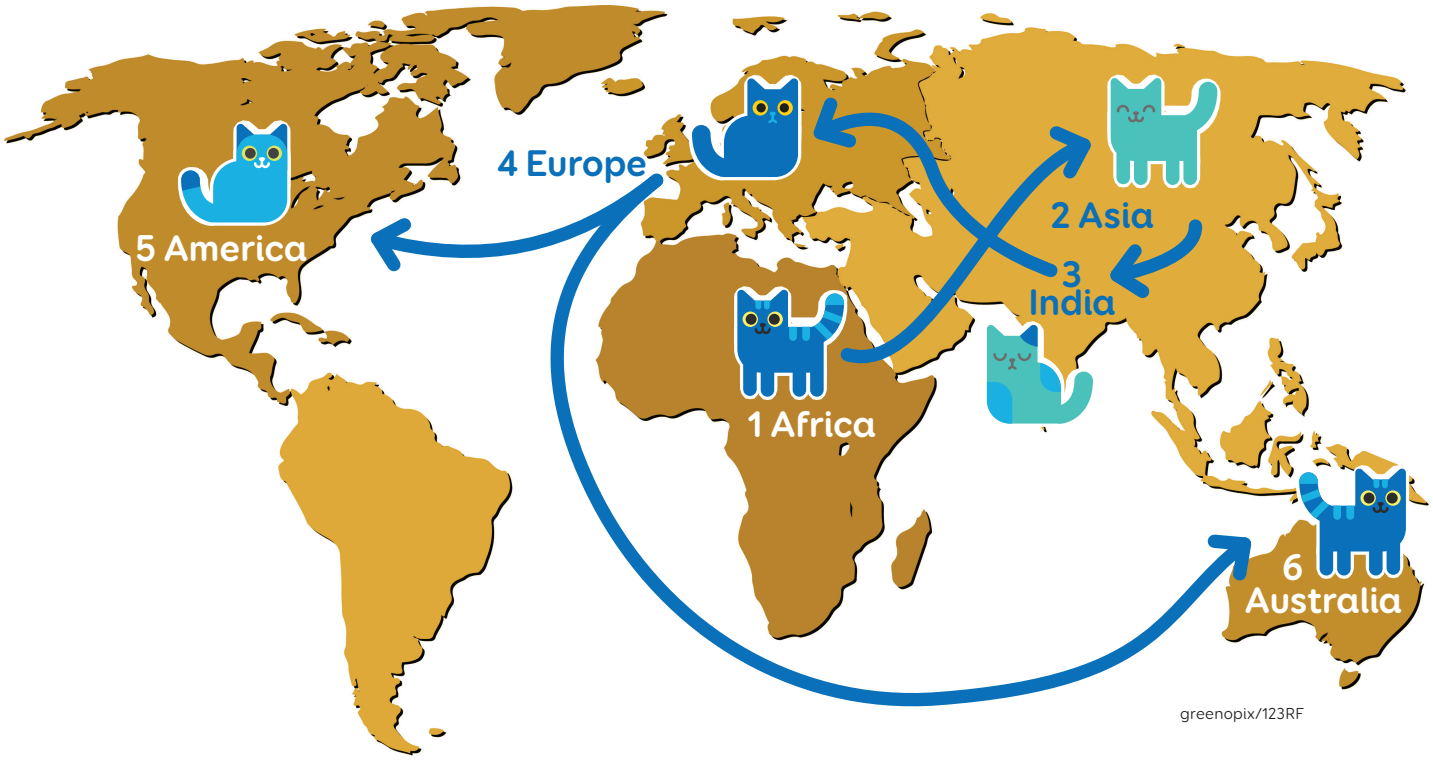
fieldsphotos/ 123RF Stock

## Fast fact

The Egyptian Mau is the oldest breed of cat. The Egyptian word for cat is “mau”.

One day, someone secretly took pet cats to Asia. Many years later pet cats were taken to other parts of the world.

## The spread of domesticated African wild cats




Many people all over the world liked cats because they were so good at catching mice and rats as well as being friendly.

The first cats came to Australia about 230 years ago in 1788.

Cats were brought to Australia on ships to protect food by catching mice and rats.



A girl with her cat and doll in Queensland, Australia.
Photographed by Jens Hansen Lundager, (1853-1930).
Courtesy of the State Library of Queensland.

## Text 2

# Did you know, 10,000 years ago all cats around the world were wild?



Ecosnap/123RF

## How did cats become pets?

Around 10,000 years ago people began growing food crops like grains and vegetables on farms. These people were called Neolithic farmers and they lived in the Fertile Crescent which included parts of north eastern Africa. A lot of the food they grew needed to be stored so they had food to eat throughout the year. There were no shops to buy food from like we have today, so growing food and storing food was very important for their survival.

With so much food stored in one spot, large numbers of rodents, like mice and rats, began to live on the farms to eat the food the people grew. This was a problem for the people. If they could not keep their food safe they would not have enough food to eat themselves throughout the year.

Wild cats began to live near the farms because there were so many rodents which they liked to catch and eat. They no longer had to travel great distances to find food to catch so they stayed close to the farms.

The people really liked the wild cats catching the rodents as this helped solve the problem of keeping their food safe.

Over time small villages grew into towns and even more people relied on food from farms, which of course needed to be stored for use throughout the year.

The people knew that having wild cats live in their towns was very important in keeping their food safe from rodents. The people were very kind to the wild cats and they learnt not to be afraid of people.



Ecosnap/123RF

A large country in north eastern Africa called Egypt was the first place African wild cats became domesticated pets. The cats became so friendly and liked being around people so much they started living in people's homes like our pet cats do today.

The people of Egypt (Egyptians) liked cats so much they worshipped them like gods and would not let anyone take them to other countries.

It was 1000 years or more before cats were secretly taken to Asia and India, and 1000 years or more after that before cats were taken to Europe.

It was only around 300 years ago that domestic cats were taken to America, and around 230 years ago when they arrived in Australia in 1788.

It is believed cats were brought to Australia on ships as pets to protect food from rodents during their voyage. Cats were also needed to protect food the people grew and stored once they arrived in Australia. Soon cats spread throughout Australia as people began to live in different parts of the country.

# Activity 2: Who was first?

**Mathematics:**

**Strand: Measurement**

- Students will describe the duration and sequence of events using years, months, weeks, days and hours.
- AC9M1M03 Yr1

## Look at the map on page 6. Write the order that domesticated African wild cats were taken to each continent from 1st to 6th.

**E.g. Cats were 1st in Africa**

**1. Cats were _____ in _____**

**2. Cats were _____ in _____**

**3. Cats were _____ in _____**

**4. Cats were _____ in _____**

**5. Cats were _____ in _____**

**6. Cats were _____ in _____**

# Activity 3: History of cats

**English**

**1. Strand: Literacy**

**Sub-strand: analysing, interpreting and evaluating**

- Students use comprehension strategies such as visualizing, predicting, connecting, summarizing and questioning when listening, viewing and reading to build literal and inferred meaning by drawing on vocabulary and growing knowledge of context and text structures.
- AC9E1LY05 Year 1

**2. Strand: Literacy**

**Sub-strand: analysing, interpreting and evaluating**

- Students will use comprehension strategies such as visualizing, predicting, connecting, summarizing, monitoring and questioning to build literal and inferred meaning.
- AC9E2LY05 Year 2

**Circle the correct words**

**Cats have/have not always lived with people.**

**Farmers liked/did not like wild cats.**

**Wild cats helped people by catching/watching mice and rats.**

**The first pet cats were in Africa/Australia.**

**The people in Egypt did/did not want other people to take cats to other countries.**

**Our pet cats are related to African wild cats/African hunting dogs.**

**Cats have been in Australia/America the least amount of time.**

# Activity 4: "It's Raining Cats... and Cats!"

## To be used after teacher or presenter reads, 'It's Raining Cats and Cats'.

**English**

**1. Strand: Literature**

**Sub-strand: Examining literature**

- Students will discuss literary texts and share responses by making connections with students' own experiences.
- AC9E1LE02 Year 1

**2. Strand: Literacy**

**Sub-strand: Texts in context**

- Students discuss different texts and identify some features that indicate their purposes.
- AC9E1LY01

**3. Strand: Literacy**

**Sub-strand: Analysing, interpreting and evaluating**

- Students use comprehension strategies such as visualizing, predicting, connecting, summarizing and questioning when listening, viewing and reading to build literal and inferred meaning by drawing on vocabulary and growing knowledge of context and text structures.
- AC9E1LY05 Year 1

**Year 2:**

**1. Strand: Literature**

**Sub-strand: Literature and Contexts**

- Students identify features of literary texts, such as characters and settings, and give reasons for personal preferences.
- AC9E2LE02 Year 2

**2. Strand: Literacy**

**Sub-strand: Texts in context**

- Students identify how similar topics and information are presented in different types of texts.
- AC9E2LY01 Year 2

**3. Strand: Literacy**

**Sub-strand: Analysing, interpreting and evaluating**

- Students use comprehension strategies such as visualizing, predicting, connecting, summarizing, monitoring and questioning to build literal and inferred meaning.
- AC9E2LY05 Year 2

## Can you remember what happened in the beginning, middle and end of the book? Write and draw what you remember.

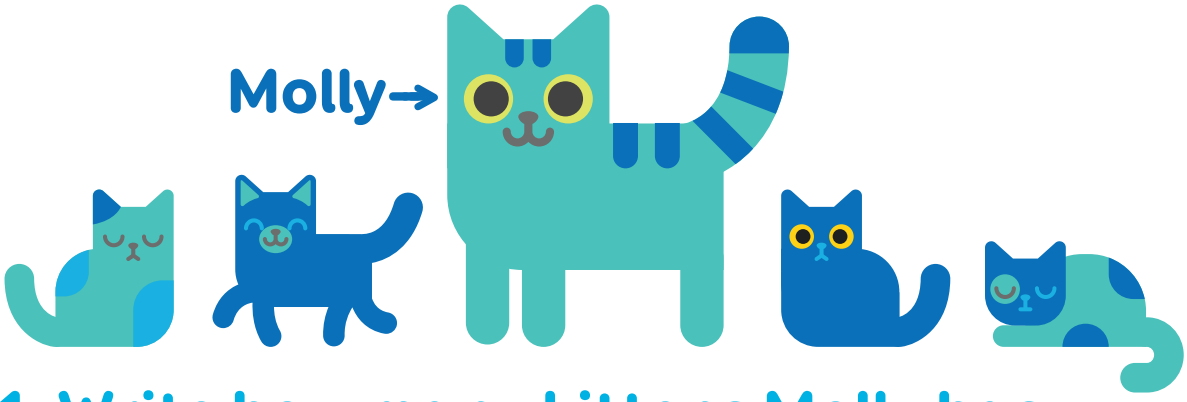
| Beginning | Middle | End |
|---|---|---|
| | | |
| | | |
| | | |

# Activity 5: Counting kittens

**Mathematics**

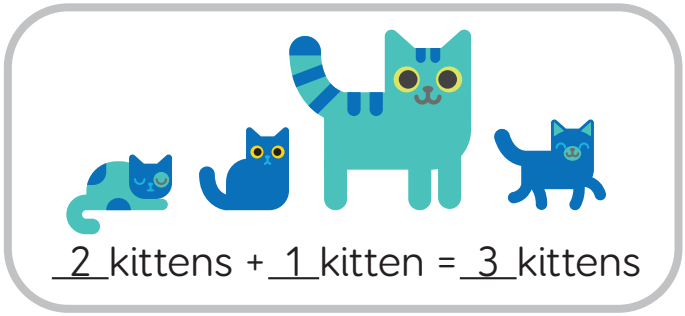
**Strand: Number**

- Students will use mathematic modelling to solve practical problems including additive and multiplicative situations.
- AC9M2N06




## 1. Write how many kittens Molly has ___

## 2. Write the number of kittens on each side of Molly then add them together.





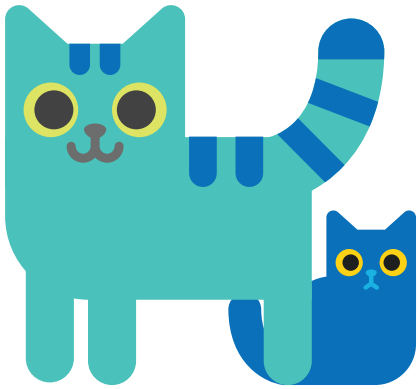

## ___kitten + ___kittens = ___kittens

## How many cats and kittens can you count on this page? ____

# Activity 6: Draw a circle around the correct answer

**Maths:**

- Students will locate positions in two-dimensional representations of a familiar space; move positions by following directions and pathways.
- AC9M2SP02 Year 2
- Students give and follow directions to move people and objects to different locations within a space.
- AC9M1SP02 Year 1

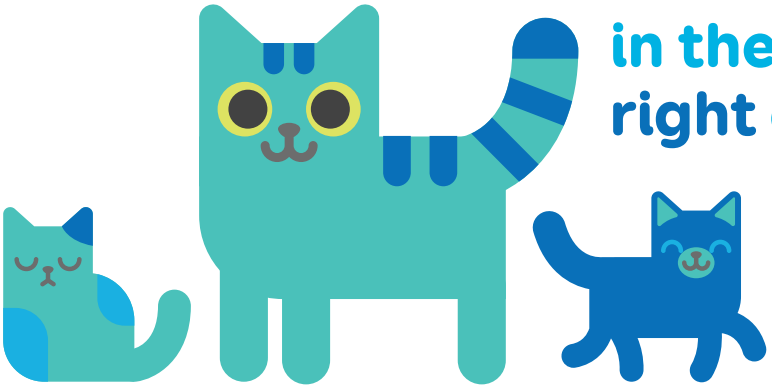


**Is the kitten in front of or behind the cat?**

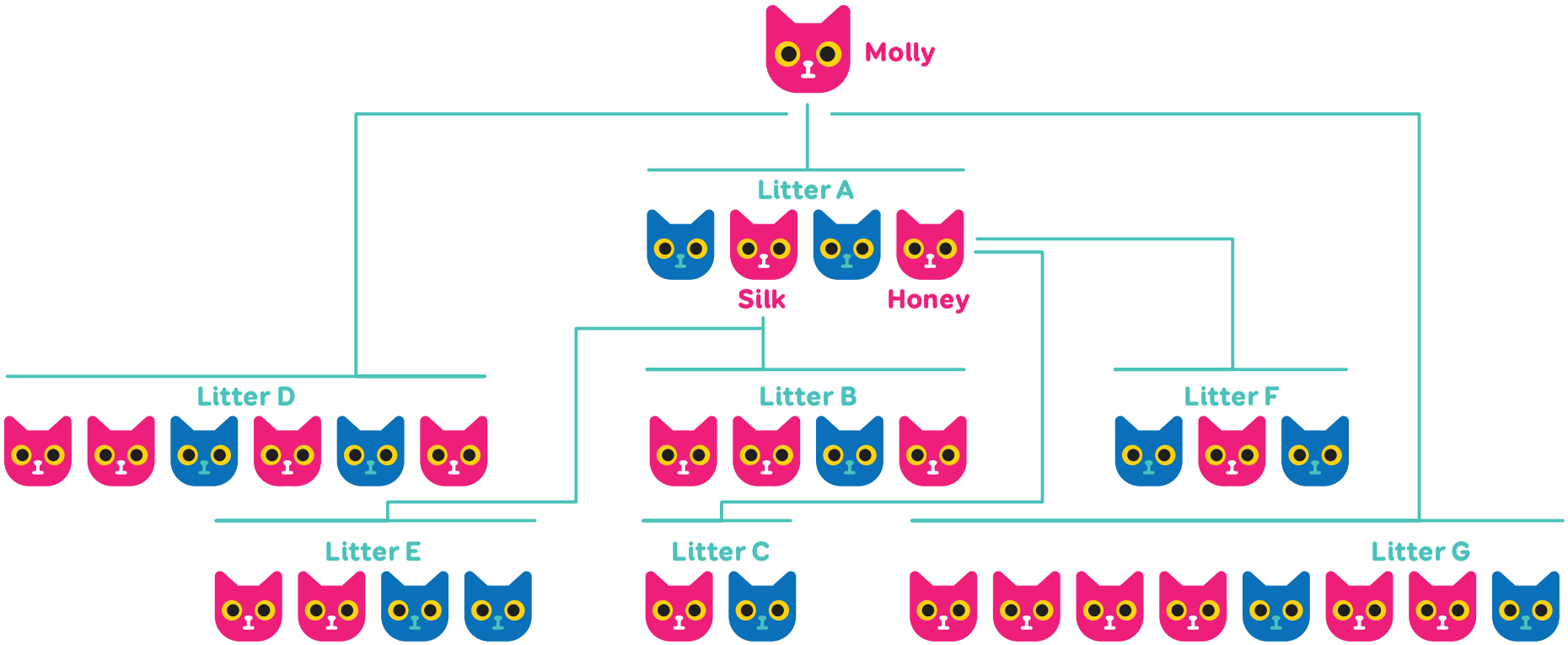
**Is there 1 kitten on top of or under the cat?**



**Is the cat to the left, in the middle or to the right of the kittens?**



# Activity 7:
# Kitten Maths Madness




Molly and her offspring Silk and Honey had ☐☐ + ☐☐ = ☐☐

Female Kittens | Male Kittens | Kittens in 18 months

# Activity 7 (continued):

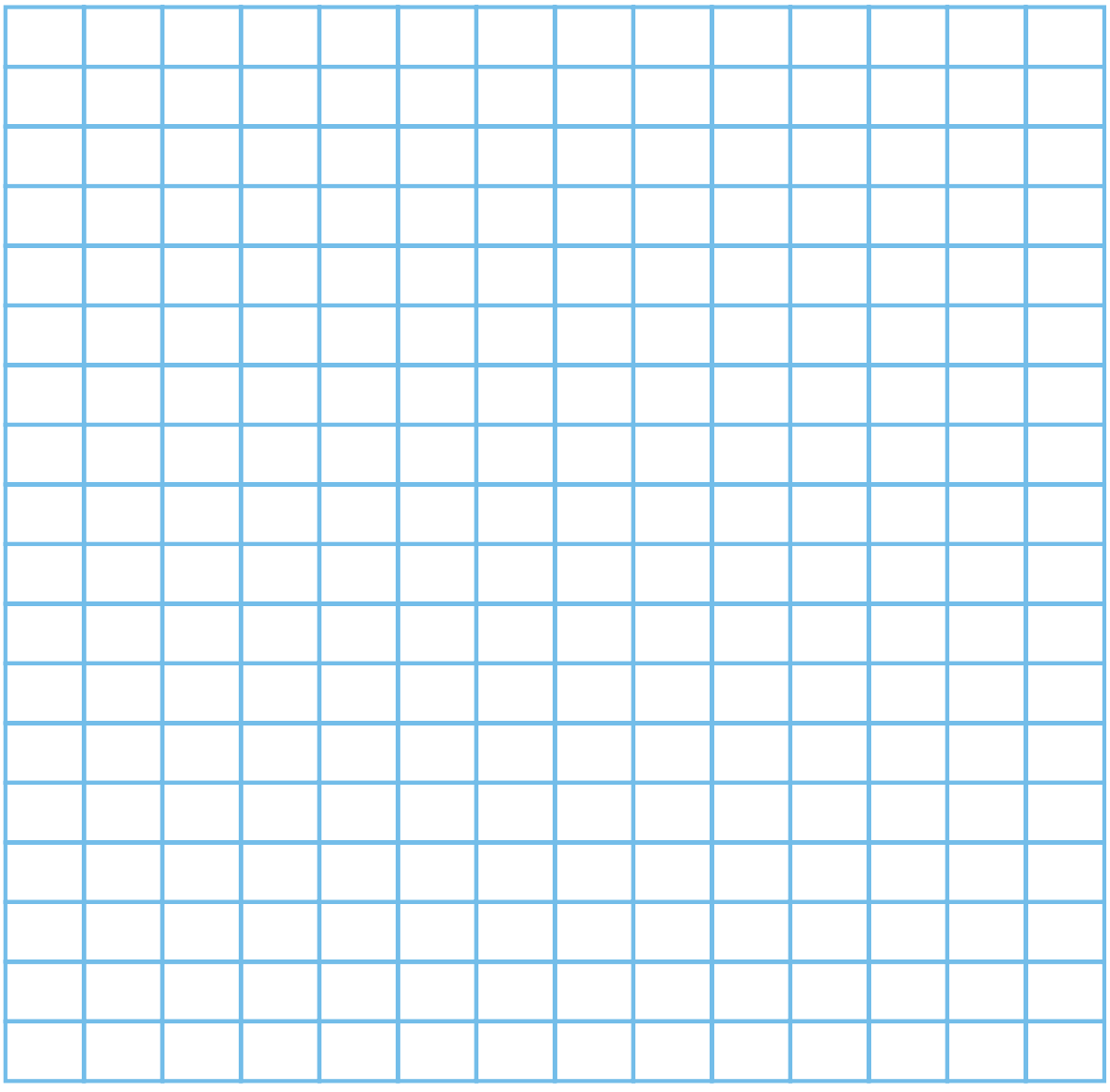
# How many offspring in 18 months

**Mathematics**

**Strand: Statistics**

- Students will represent collected data for a categorical variable using one-to-one displays and digital tools where appropriate; compare the data using frequencies and discuss the findings.
- AC9M1ST02

## Make a graph to show how many female offspring and how many male offspring were born to Molly, Silk and Honey in 18 months.



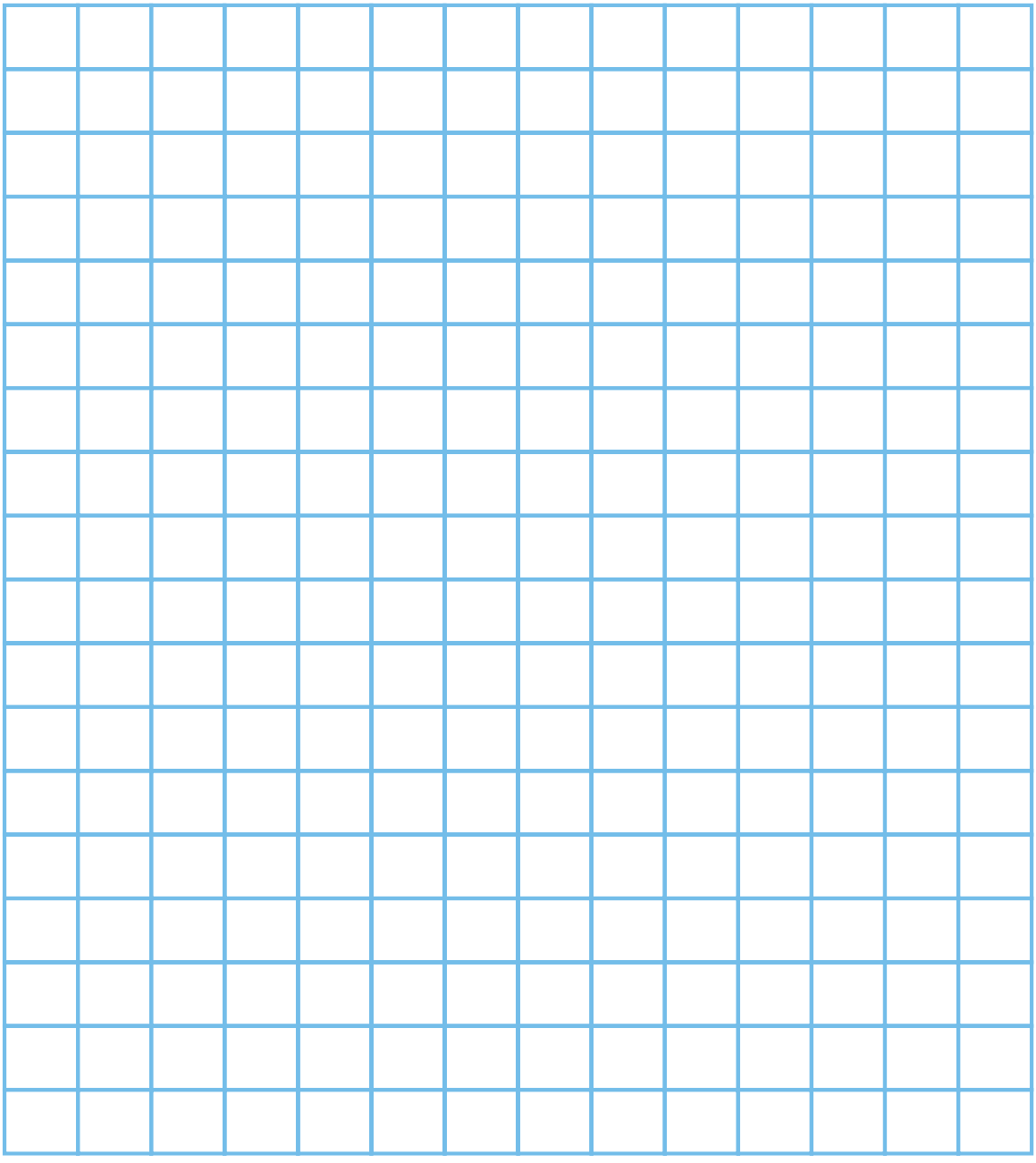
# Activity 7 (continued): How many offspring in each litter

**Mathematics**

**Strand: Statistics**

- Students represent collected data for a categorical variable using one-to-one displays and digital tools where appropriate; compare the data using frequencies and discuss the findings.
- AC9M1ST02

## Make a graph to show how many offspring were born in each litter.



# Activity 7 (continued):
# What are the chances

**Mathematics**

**Strand: Number**

- Use mathematical modelling to solve practical problems involving equal sharing and grouping: represent the situations with diagrams, physical and virtual materials, and use calculation strategies to solve the problem.
- AC9M1N06 Year 1

**Strand: Statistics**

- Represent collected data for a categorical variable using one-to-one displays and digital tools where appropriate; compare the data using frequencies and discuss the findings.
- AC9M1ST02 Year 1

**1.** What was the lowest number of kittens born in a litter? _____

**2.** What could be the lowest number of kittens born in a litter? _____

**3.** What was the largest number of kittens born in a litter? _____

**4.** What was the average (the most common) number of kittens born in a litter? _____

**5.** How many female cats and kittens are on page 8? _____

6. If all the female cats and kittens on page 8 had an average litter of 4 kittens, and had 2 litters in the following year, how many kittens would be born in that year? Show your working out here.

7. Is it likely or unlikely Molly would have the same number of kittens in the next 18 months? Explain your answer.

8. What is the best way to stop cats and kittens from having or making offspring?

# Why are cats so good at adapting? What makes them special?

Cats have special features that make them good hunters. All cats, including wild cats, lions and tigers have similar features, our pet cats are just smaller.

## Eyes

- Split pupils
- Can see in dim light
- Three eyelids
- No eyelashes
- Cats can see up to 35 metres away but cannot see things very close to them clearly

## Whiskers

- Sensitive
- Help them feel things
- On either side of their nose, above their eyes, on their chin and cheeks, and the back of their lower front legs.
- Whiskers are extremely sensitive and help cats measure an object's distance, direction and how it feels.

## Tail

- Balance
- Show how cats are feeling

## Ears

- Can move together or one at a time
- Hearing is a cat's strongest sense
- It's better than dogs.
- Cats have very sensitive hearing and can hear noises up to 1.6 km away.



# General Information for Challenges 1, 2 & 3

## Mouth

- Strong, sharp teeth
- 4 types of teeth
- Incisors are small and used for keeping fur clean and to hold small prey in the mouth.
- Canines are long and very strong and used for grabbing and killing prey.
- Molars and pre-molars are used for cutting through meat and bone.
- Cats cannot chew food as their jaws only move up and down, not side to side like human jaws do.
- Barbs on tongue
- Jaws only move up and down




duben/123RF

## Claws

- Used for balancing, digging, self-defence and catching food
- To keep their front claws sharp cats retract them when not being used.

## Paws

- Strong and soft
- Sensitive and help them feel things
- Cats walk on their toes and this allows them to walk quietly.
- Cats only sweat through their feet.

## Nose

- Cats sense of smell is better than dogs
- Cats don't have many taste buds on their tongue, they rely on their sense of smell to know if food is ok to eat. The ridges and bumps on a cat's nose are unique, like human finger prints, no two are the same.

## Fur (hair)

- Cats have 4 different types of fur (hair)
- Down hairs are closest to the skin and are short, fine and soft and keep cats warm.
- Guard hairs are long and thick and protect the down and awn hairs.
- Vibrissae (whiskers) are large, tough and sensitive to touch, providing cats with information about the world around them.

## Tongue

- A cat's tongue is covered in tiny backward facing barbs called papillae which help them lick meats off bones and keep their fur clean.
- Anything caught on a cat's tongue like wool, string, cotton and tinsel is very dangerous as it is usually swallowed and may have to be surgically removed.

# STEM Challenge Part 1:
# Template 1

## Draw a cat and label some features.

Write what the features are used for e.g. eyes for seeing well.

# STEM Challenge Part 2:
# Template 2

## Draw a cat and label at least 6 features.

Write what the features are used for e.g. eyes for seeing well.

What materials will be used to represent each feature and why, e.g. round buttons for round eyes.

# STEM Challenge Part 3:
# Template 3

## Write why you chose the materials for each feature

e.g. I chose round green buttons because some cats have green eyes.

**I chose** _____

_____

**I chose** _____

_____

**I chose** _____

_____

**I chose** _____

_____

**I chose** _____

_____

**I chose** _____

_____

# My model of a cat or kitten

## Place a photo of your model here

## Fast facts

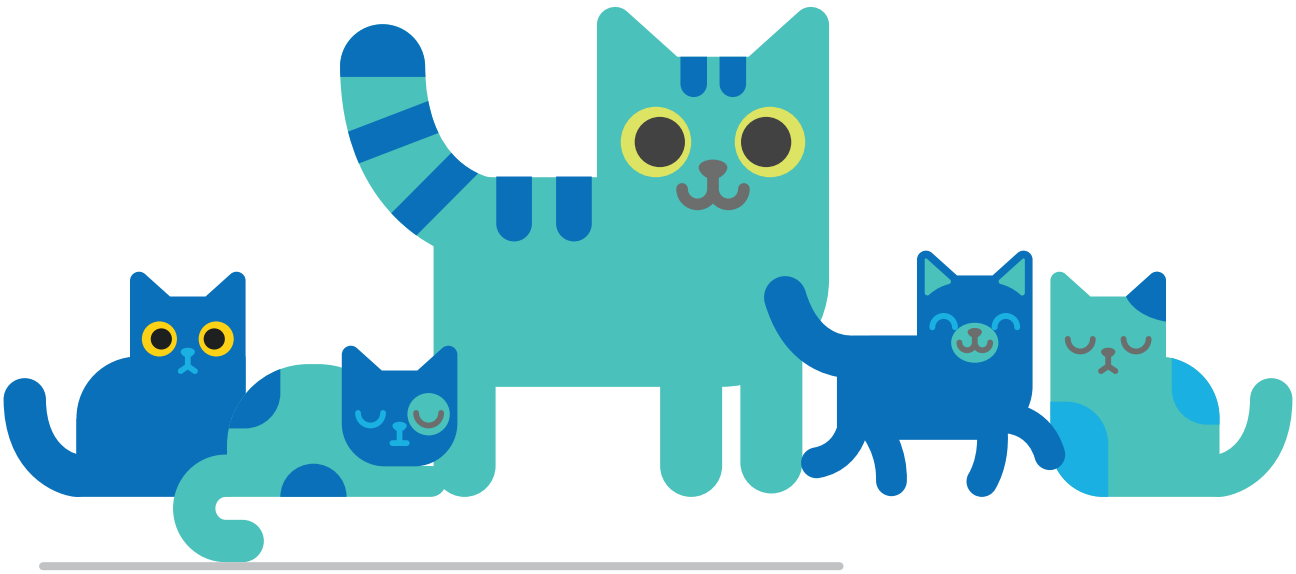
A female cat can become pregnant from 4 months of age.

In Tasmania cats can have 2 litters of kittens a year.
In places where it is warmer cats can have 3 or 4 litters of kittens each year.

Desexing cats is the best way to stop cats having kittens.

A group of baby kittens is called a litter.
When they grow up they will have features like their parents. They may be a different colour.

Litter sizes vary from 1 to 8 kittens with an average litter size being 4 kittens.





stephaniezieber/123RF

# What you can do to help

Cats can live up to 21 years, so owning a cat is a long-term commitment.

As a general rule treat kittens for fleas straight away and treat for worms from 2 weeks of age. Talk to your local veterinarian about which products are safe to use on kittens younger than 8 weeks of age. All other pets need to be treated as well.

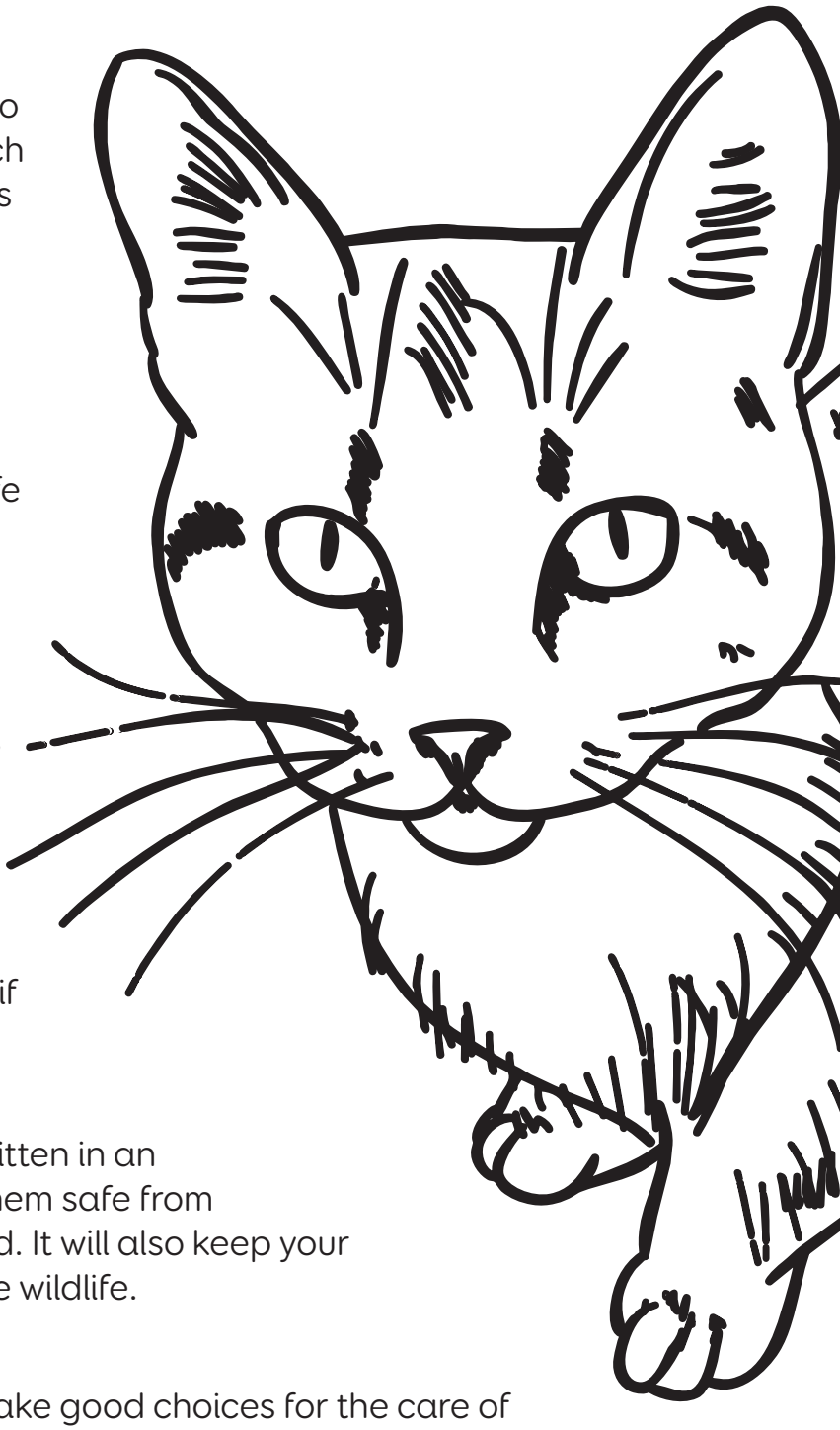
Vaccinations protect pets from a range of diseases which can be life threatening. Kittens should have their first vaccination between 6 - 8 weeks of age.

Desexing male and female kittens can be done from 8 - 10 weeks of age.

Provide your cat or kitten with a collar, id tag and microchip, even if they live indoors.

Think about keeping your cat or kitten in an enclosure or indoors: this keeps them safe from being lost, injured, killed or abused. It will also keep your neighbours happy and protect the wildlife.

Encourage people you know to make good choices for the care of their cat/s, their community and the environment.



**Thanks for helping my friends**



Where possible kittens should remain with their mother until 8 – 10 weeks of age. This gives them the best opportunity to develop physically and socially.

Encourage owners of unwanted cats and kittens to surrender them to a reputable shelter instead of giving them away.

Anyone can sell or give away a cat or kitten but legally it must be at least 8 weeks old, microchipped, desexed, wormed and vaccinated. Cats sold between registered breeders and genuine show cats are exempt.

Do not take free or cheap kittens unless they are already desexed, microchipped and vaccinated.

Never dump or abandon a cat or kitten (it is against the law).

Call your local animal shelter for help on how to care for your cat/kitten or how to find a new home for your cat/kitten if you can no longer care for them.

If you are eligible, National Desexing Network may help by reducing desexing fees. For more information go to www.ndn.org.au
Ph 1300 368 992

# Cat Language




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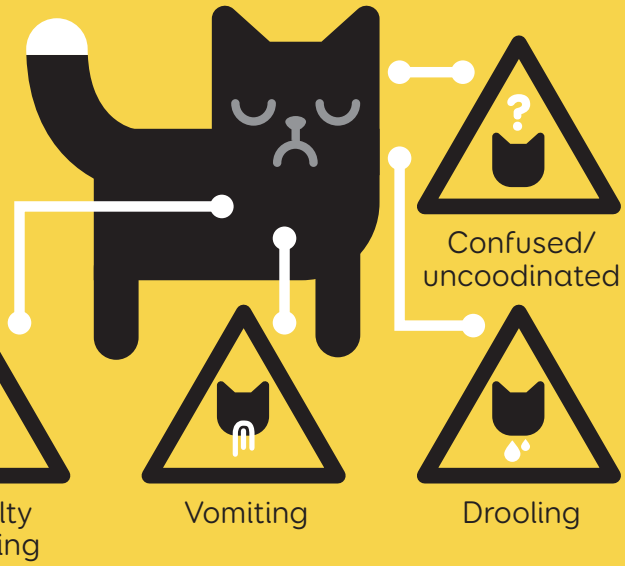
# POISON SAFETY AT HOME FOR CATS

## Common cat poisons

- Dog flea treatments
- Human Medicine
- Antifreeze
- Household chemicals
- Lillies
- Human Foods

## Symptoms of poisoning

The symptoms of poisoning aren't always obvious and can vary, but there are a few of the most common signs...



- Confused/ uncoodinated
- Fitting/ seizures
- Difficulty breathing
- Vomiting
- Drooling

## What should I do if I think my cat has been poisoned?

### DO:

- Take them to the vet immediately
- Show your vet labels or samples of the suspected poison, if known
- Keep other pets away from source

### DO NOT:

- Try to make your cat vomit or feed them salt water
- Wait for the symptoms to stop or assume they will go away
- Panic

## Prevention is better than a visit to the vets!

Remember, keep poisonous substances out of cats' reach - ideally stored in a sealed container or closed cupboard or shed.

This list and advice is not exhaustive.
For further advice please consult your vet
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## Vocabulary list

**Adapting** - something that changes slightly over time so it can continue to exist in a new environment

**Breed** – a group of animals having common ancestors and sharing certain looks and or personalities that are not shared with other members of the same types of animals. Ragdolls, Burmese and Siamese are all different breeds of cat

**Crops** - living plants grown by farmers. Most crops are foods such as grain, vegetables, or fruit

**Desexing** – to surgically remove the sexual organs of a cat by a vet. This is also called neutering or spaying



Vet nurse getting Honey ready for her desexing operation



Vet desexing Honey so she cannot have kittens



Honey eating food after her desexing operation

**Domesticated** - thousands of years of taming certain breeds of animals results in that breed wanting to live with or live close to people

**Litter** - a number of young animals born to an animal at one time

**Offspring** - an animal's young

**Pregnant** - when a female cat has kittens growing inside her

**Reproduce** - to produce one or more babies

**Retract** - to pull back in

**Rodent** - mammals that have two long front and bottom teeth (incisors) that grow all the time and are keep short by biting and chewing (gnawing)

**Surgically remove** - an operation to remove something




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