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About higher-order thinking skills

Teachers report that their curricula are lacking in materials that help students learn to think critically. This book provides practice applying higher-order thinking skills in English, maths, science, and humanities and social sciences contexts.

What are higher-order thinking skills?

They are not the skills—such as alphabetising or calculating a perimeter—used in specific academic subjects. Rather, they are skills used across all curriculum areas and in non-academic situations; the skills for making use of information.

In this book, higher-order thinking skills are represented by behavioural verbs. Each page focuses on one behavioural verb, which is defined at the top of the page. Each behavioural verb is emphasised in the instructions so students become aware of when and how they are using the thinking skill.

Why is it important to practise higher-order thinking skills?

Teachers may debate which is the most important curriculum area or skill in school, but some things are widely accepted by teachers and academics alike:

- Students need well-developed thinking skills to be successful in the classroom, on assessments and in the real world.
- Students can learn to think better if they’re taught how to do so.
- Critical thinking skills are more important than ever in today’s competitive, rapidly changing, technology-based environment.

Young children naturally use thinking skills. They learn autonomy through exploration, observe their environment using logic and reasoning, try new things and think creatively. As children grow and enter an academic setting, some of their natural curiosity and problem-solving instincts are not engaged as often as they could be.

While all thinking skills are important, students generally get ample practice with recall, recognition, identification and comprehension. Therefore, this book focuses on thinking skills that are more challenging to incorporate. These include analysing, predicting, modelling, composing, organising, evaluating options, designing, critiquing and problem-solving.

People with strong critical thinking skills can accomplish a great deal, whether or not they have background knowledge in a topic. Critical thinkers know how to acquire new knowledge and how to approach problem-solving. They also know how to persevere and use productive struggle to find an answer.

Higher-order thinking categories

Behavioural verb	Page number	Page title	Cross-curricular link
analyse	6	Robot friends	Mathematics/English
	73	Hundred chart puzzler	Mathematics
	110	Himba huts	Geography/Science
	124	Desert life	Science
apply	93	Playful frogs	Mathematics
arrange	25	See what happened	History
	31	At the races	Mathematics/Logic
	47	Clean teeth	English/Health
	58	Tomato time	Mathematics
assemble	28	Magic sums	Mathematics
	127	Lots of letters	English
	136	Putting the pieces together	Science/English
brainstorm	65	It's too hot!	Geography/Science
	72	Solve Sonya's problem	English/Mathematics
	151	Hungry boy	Health/English
categorise	34	Animal groups	Science
	79	So many animals!	Science
	134	Objects in the sky	Science
change	87	What's the word?	English
choose	19	Fun tools	Science
	137	What did you say?	English
classify	20	Old and new	History
	101	Going shopping!	English
	144	Birds of a feather	Science/Mathematics
compare	2	Shopping trip	English
	24	Just like animals	Science
	96	What is the same?	Mathematics/Science
	103	Beads on a string	Mathematics
	141	Spot the Glots	Mathematics
	145	A world of landforms	Geography
	150	Frontier Town	History
compile	71	See the light	Science/Mathematics
complete	48	Plus and minus detective	Mathematics

Behavioural verb definitions

analyse: to look at how parts go together

apply: to use what you know in a new way

arrange: to put in order

assemble: to put parts together

brainstorm: to think of ways to solve a problem

categorise: to put things into groups

change: to make something different

choose: to decide what is best

classify: to put things into groups that have something in common

compare: to look for things that are the same or different

compile: to put facts together

complete: to make something whole

construct: to build something

convince: to make someone agree with you

create: to make something new

decide: to choose after thinking

deduce: to use clues to figure something out

defend: to give reasons why you think someone is right

describe: to tell how something looks, sounds, smells or feels

design: to plan how something will look

determine: to figure out

discover: to find out

disprove: to tell or show that something is not true

distinguish: to tell the difference between things

elaborate: to tell more about something

eliminate: to take out something that does not belong

estimate: to make a good guess

evaluate: to judge carefully

examine: to look at closely

experiment: to try doing things to see what works

explain: to tell why

extend: to make longer

figure out: to find an answer

Behavioural verb definitions

generate: to make something

give an example: to show one thing in a group

group: to put things that look alike together

identify: to tell what something is

imagine: to think of in your head

infer: to use clues to learn something new

interpret: to decide what something means

interview: to ask someone questions

invent: to create for the first time

judge: to decide how important something is

justify: to give a good reason for something

modify: to make small changes

order: to list things in a certain way

organise: to make something easy to understand or do

persuade: to make someone agree with you

plan: to think of a way to reach a goal

predict: to tell what you think will happen

prioritise: to figure out what is most important

propose: to suggest an idea or a solution

prove: to show that something is true

recommend: to tell the best ideas

reorganise: to put things in a different place

represent: to show in a drawing

rewrite: to write something again to make it better

show: to give information in a picture

solve: to find an answer to a problem

sort: to put things into groups

state the rule: to tell the way something is done

suggest: to tell an idea

summarise: to tell important information in a few words

support: to explain a choice

test: to see if something works

visualise: to imagine how something will look

Robot friends

analyse: to look at how parts go together

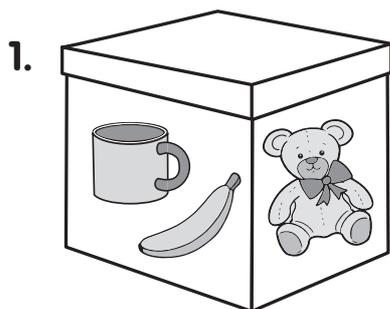
Analyse the shapes in Robin the Robot. Write how many of each shape she has, then write what Robin is saying.

 squares: _____
 rectangles: _____
 triangles: _____
 circles: _____
 trapezoids: _____

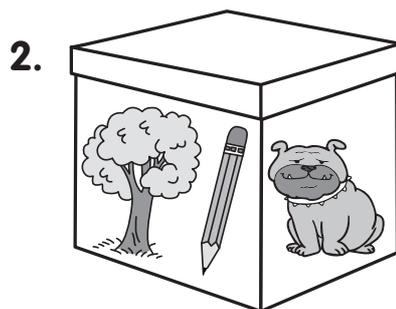
What's in the box?

describe: to tell how something looks, sounds, smells or feels

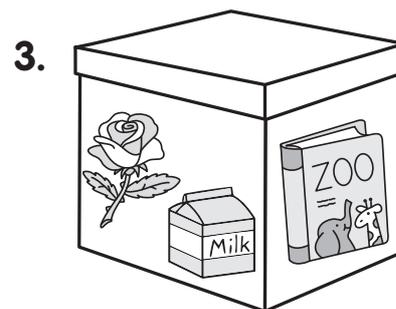
Look at the three things in the box, then read the word below the box. Circle the picture the word tells about, or describes, then write two more words to **describe** the same picture.



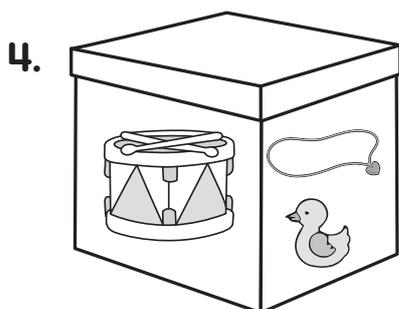
fluffy



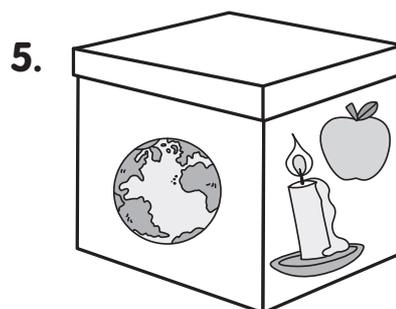
tall



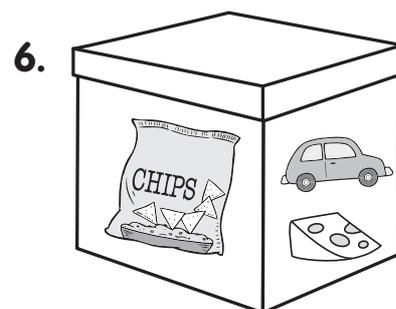
rectangle



yellow



round

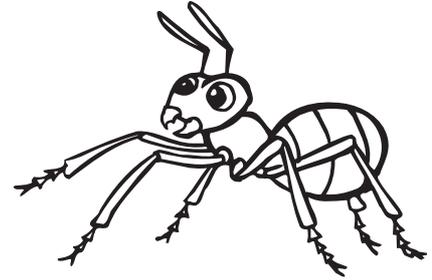


triangle

Hide-and-seek

discover: to find out

Annie Ant is playing hide-and-seek with three friends. Each friend is under a cup. Read the clues to **discover** where the friends are.



1. Sid is 1 cup away from cup 4.
He is 1 cup away from cup 6.

Sid is hiding under cup _____.

2. Tina is 2 cups away from cup 3.
She is 4 cups away from cup 5.

Tina is hiding under cup _____.

3. Bud is 2 cups away from cup 5.
He is 4 cups away from cup 7.

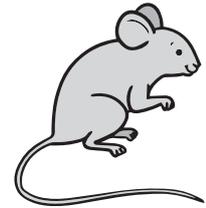
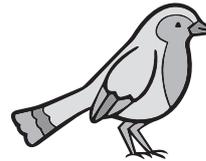
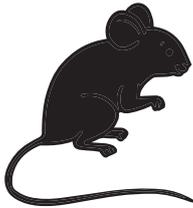
Bud is hiding under cup _____.

Shadow animals

examine: to look at closely

Examine the shadow. Circle the animal that matches the shadow, then write why you chose that animal.

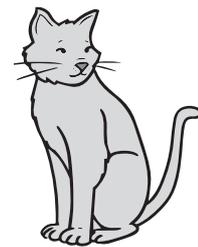
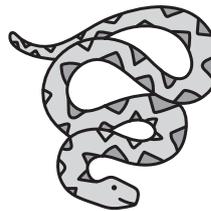
1.



I think this is the shadow of a _____

because _____.

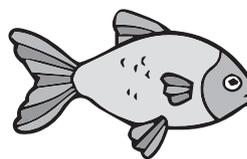
2.



I think this is the shadow of a _____

because _____.

3.



I think this is the shadow of a _____

because _____.

My class rules!

give an example: to show one thing in a group

Think about the rules in your classroom. Write three rules you have in your class at school.

1. _____

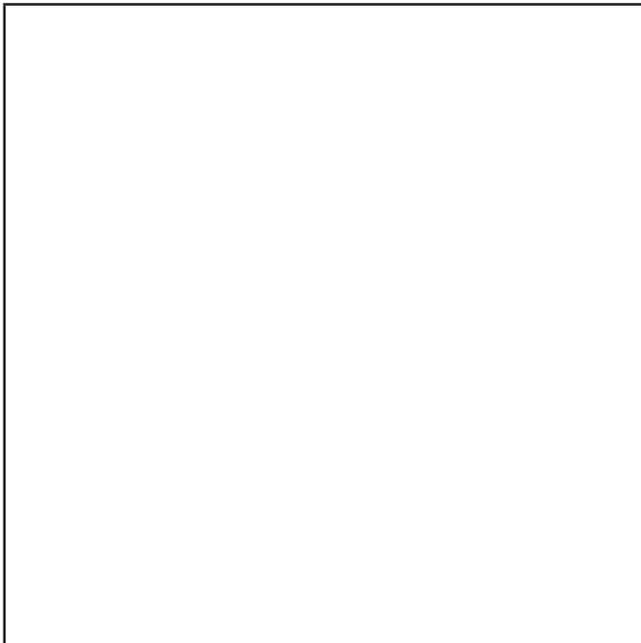
2. _____

3. _____

Choose one rule.

Draw a picture to **give an example** of someone breaking the rule. Draw a picture to **give an example** of someone following the rule.

4. Breaking a rule



5. Following a rule

