

5 Solve it!



? What interesting objects can you see?
What do we use them for? Share ideas.

1 Listen, find and say. Then tell a friend.



engine



invention

lock

workshop

machine

Disney
THE NUTCRACKER
AND THE
FOUR REALMS
Storyboard



2 Watch and answer.

Solving difficult problems

- 1 Why did Clara make a machine with a candle and a balloon?
- 2 What's the problem with Clara's egg?

Responsible decision-making

3 Listen and write.



Concept art

Clara goes to Drosselmeyer's **1** _____. She sees a lot of interesting **2** _____. There's a metal lake with birds. But there's a problem with the **3** _____. Clara fixes it. Can she fix the **4** _____ in the Four Realms, too? Can Clara solve her problem and open the **5** _____ on the egg?

4 Imagine you're in Drosselmeyer's workshop. What can you see?

I can see a large machine on the table.

Talk buddies

1 Read and listen. What can you write in a notebook?

PUZZLE TIPS

Here are some tips to help you solve the puzzles in this book!

- Look for clues** - think about the things you can see.
- Brainstorm** - think of different ideas to solve the problem and share your ideas with a friend.
- Collect information** - find out more about the problem by looking in books or online.
- Take notes** - write down important information in your notebook.
- Find a solution** - what are you going to do and how?
- Do an experiment** - try your solution to see if it works.
- Crack the code** - use the code to find the solution!

I've got a great new puzzle book!



3 brainstorm

4 collect information

5 take notes

6 find a solution

7 do an experiment

8 crack a code

1 solve a puzzle

2 look for clues

2 Listen and repeat the words in 1.

3 Read and write the phrase. Then write the number from 1.

- a He looks for things he can see. He looks for _____.
- b She tests her solution. She does an _____.
- c He wants to find out more. He _____ information.
- d She thinks of different ideas. She _____.

Review

First, ...
Then, ...
Finally, ...

4 Think about how you can solve a problem. Tell a friend.

Problem: My pet is missing.

First, I brainstorm places in the house.

I can name phrases for solving problems.

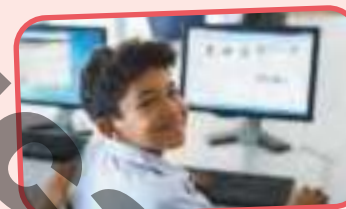


1 Watch and write T (True) or F (False).

- 1 Clara has to solve a difficult puzzle in the film. _____
- 2 She doesn't have to look for clues. _____
- 3 She asks Drosselmeyer to help her. _____
- 4 She doesn't have to crack a code. _____

2 Read and write. Then listen and check.

have to don't have to has to doesn't have to



- 1 You must find out more. You _____ collect information.
- 2 He can try his idea if he wants to. But he _____ do an experiment.
- 3 The information is on my phone. I _____ take notes.
- 4 He must find a solution. He _____ crack the code.

3 Listen and follow. Then say.

★ **Grammar Heroes**

I	have to don't have to	solve the problem. take notes.
He	has to doesn't have to	

4 Talk about things you have to or don't have to do when you solve a problem.

I have to brainstorm.

I don't have to solve the puzzle today.

Talk buddies



The Bird puzzle

- 1 Look. How many puzzles are there?
- 2 Listen and read. Can you solve the puzzles in the story?



Think!

What's the name of Mrs Gears' bird?

Levan loves science. His science teacher Mrs Gears says, 'You have to solve three puzzles to find my beautiful bird. Then you have to make the bird move!'

'I can do it!' says Levan.

First, Levan brainstorms the problem. Then, he collects information. Next, Levan finds a solution.

Levan looks at the first puzzle. He has to crack the code to open the door!

The LOCK CODE puzzle

- 7 4 8 One number is correct and in the correct place.
 7 8 5 No numbers are correct.
 6 5 4 One number is correct but in the wrong place.
 1 5 9 Two numbers are correct but in the wrong place.

Levan puts three numbers into the lock and the door opens!

The BOX puzzle

One message is true and two are false.

The bird is in this box.

The bird isn't in this box.

The bird isn't in Box 1.

The BIRD puzzle

Only one of the shapes makes the bird move.

If $2 + 2 = \text{fish}$ and $3 + 3 = \text{eight}$

What is $7 + 7$?

square ■ circle ● triangle ▲

Levan pushes a shape and the bird moves!

'Well done!' says Mrs Gears, 'You solved all the puzzles!'

3 Read again and write.

- 1 Mrs Gears is Levan's _____ teacher.
- 2 Mrs Gears has got a beautiful _____.
- 3 Levan has to solve three _____.
- 4 Levan makes the bird _____.

4 Think and answer.

Solving difficult problems

- 1 What problem does Levan have to solve?
- 2 What three things does he do first?

Responsible decision-making



I like the lock code puzzle best!



My favourite puzzle is the bird puzzle!

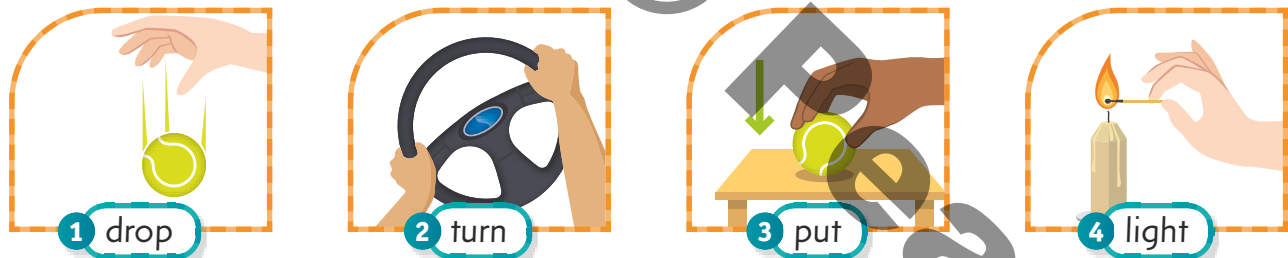
Then he sees the second puzzle. There are three boxes on the table.

Levan chooses the correct box and it opens. He pulls out a beautiful bird. Now he has to make the bird move.

He then sees the third puzzle. He looks for clues and thinks about the problem.



1 Listen and say. Then tell a friend.



2 Listen and read. Tick (✓) Clara's invention.

Emily: I really like Clara's invention in the film. But how does it work?

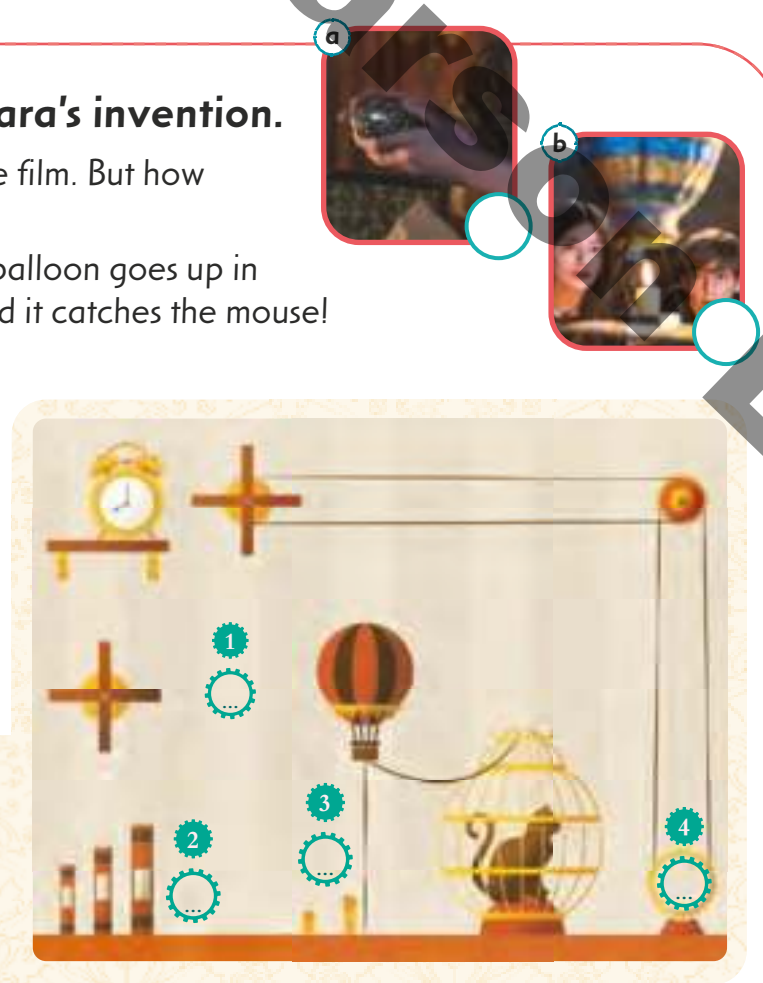
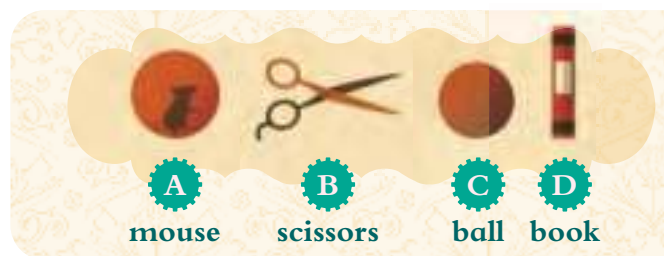
Pablo: Clara lights the candle. Then the balloon goes up in the air. That starts the machine and it catches the mouse!

Emily: Cool!

Pablo: I've got a puzzle like Clara's. Let's solve it together! We have to put the things A–D in the spaces 1–4.

Emily: Oh, OK! Do we have to use all the things?

Pablo: Yes, we do!



3 Listen and follow. Then say.

★ Grammar Heroes

Do we	have to	light the candle?
Does she		turn the wheel?
Yes, we do.	No, she doesn't.	

4 Solve the puzzle in 2 with a friend.

Do we have to put the ball in space 1?

Yes, we do.

Talk buddies



1 Lessons 1 and 4 How do the characters in the unit solve difficult problems?

2 Listen and read. Then number in order.

HOW TO SOLVE DIFFICULT PROBLEMS



- a Let's do it and see if our plan works!
- b Let's think about what we know.
- c Let's plan what to do.
- d So, did our solution work?
- e Let's talk about the problem together.

3 Read, look and discuss.

You made a robot out of a metal can but it doesn't work. How can you solve this problem?

Tip
• Check the wires and batteries!



Useful Language

How about ...? Let's try ...

4 Think about 3. Did you do the steps from 2?

Did we think about the problem?

Yes, we did. We thought about what we knew and didn't know.

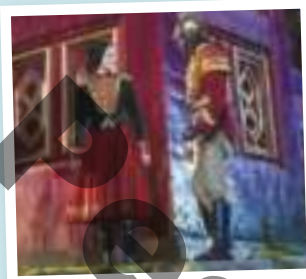
Be a hero!

What are you going to do next time you have to solve a difficult problem?



1 Explore Read, listen and circle.

- Machines make our lives easier / more difficult.
- Machines make forces smaller / bigger.



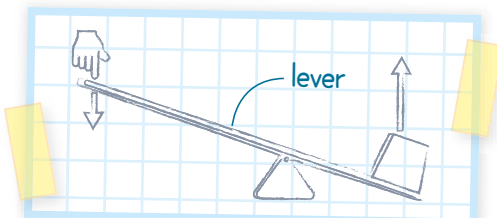
Clara meets a nutcracker in *The Nutcracker and the Four Realms*. A nutcracker is a simple lever.

AMAZING MACHINES

We invent machines to make our lives easier. They do difficult jobs for us by making forces bigger.

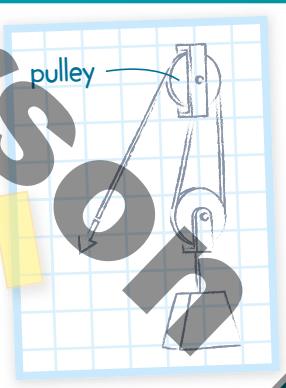
LEVERS

A **lever** helps us to move or lift heavy things. When you push down on one end of the lever, the other end goes up. You don't have to use a lot of force to lift heavy objects. There are levers in a seesaw, a pair of scissors and a nutcracker.



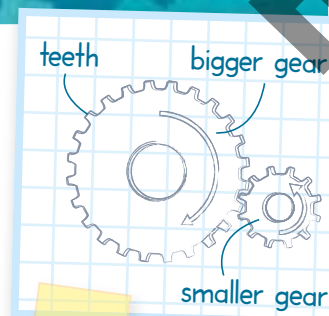
PULLEYS

A **pulley** has got a wheel that can change a force. When you pull down on one end of the pulley, the wheel turns and the object on the other end of the pulley goes up. We use pulleys to pull up water or to lift heavy rocks when we're building things.



GEARS

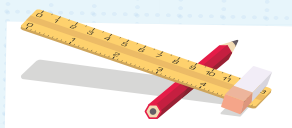
A **gear** is a wheel with **teeth**. The teeth of one gear go into the teeth of another gear. When we turn one wheel, the other wheel turns. Gears make our bikes and cars go quickly.



MINI-PROJECT

3 Make a simple lever. Try lifting different objects.

THINK Discuss. What objects in your classroom can you use to make your lever?

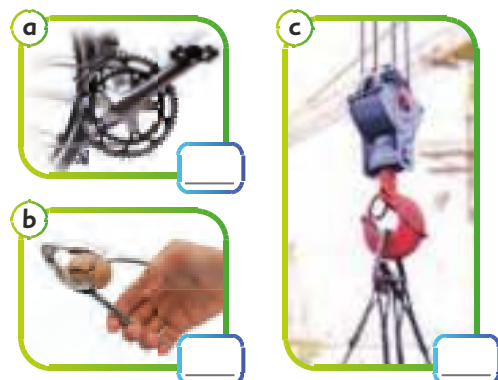


PLAN Research and plan your experiment. **Activity Book** page 53

SHARE Present your ideas to the class.

2 Think Look, read and number.

- a lever
- a pulley
- a gear

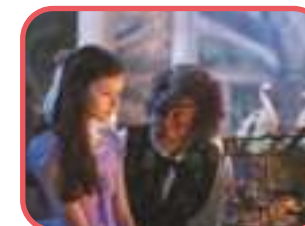


I can read and understand how machines work.

I can do it!

1 Read and circle. Then listen and check.

- How can Clara open the **engine** / **lock** on the box? She doesn't have to take **information** / **notes**. She **have** / **has** to look for clues.



- Clara is in the **workshop** / **invention**. She **don't** / **doesn't** have to do an experiment. She has to fix the **solution** / **machine**.

Let's talk!

Do we have to drop the ball?

No, we don't.

2 How does Clara's invention work? Ask a friend.

- Do / have / light / candle?
- Do / have / turn / wheel?
- Do / have / catch / mouse?
- Do / have / put / mouse / pulley?



3 Write some tips for younger students.

HOW CAN WE SOLVE DIFFICULT PROBLEMS?

- We have to think about the problem.
- We have to _____.
- We have to _____.
- We have to _____.

I can...

- name phrases related to inventions and problem-solving
- talk and ask about what I have to do
- solve difficult problems
- understand about how machines work

I completed Unit 5!