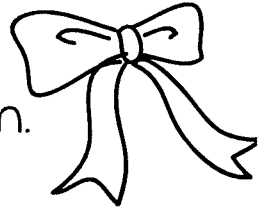


# Ruby's Ribbons



- 1** Ruby is measuring her ribbons. The red one is 6 cm. The green one is 5 cm. The yellow one is 12 cm. The pink one is 8 cm. The blue one is 9 cm. Draw Ruby's ribbons in their real size, ordered from shortest to longest.

**a** Underline the question.      **b** Circle the facts.

**c** Write the ribbon lengths.

red

green

yellow

pink

blue

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**d** Order the lengths from shortest to longest.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- 2** Draw Ruby's ribbons in their real size, ordered from shortest to longest.

- 3** Share your answer with a partner. Are your answers the same? Is anything different?

# Critical thinking and problem solving

**Mathseeds** encourages children to solve problems and use higher level thinking throughout the program. These critical thinking and problem solving worksheets provide a growing toolkit of different strategies, using a simple structure that helps children grow in skills and confidence. The more experience children have with higher-level thinking, the more confidence they will gain to think logically, take risks, ask questions and apply reason. In turn, this will encourage them to communicate, explain and justify their mathematical reasoning.

Tackle each problem using this simple structure.

## 1. Read the question

Encourage children to read the question carefully.

## 2. Underline the question

What is the question asking them to do? In turn, children can ask their own questions such as: Is this an addition problem? Do I need to draw a shape? Am I being asked to measure something?

## 3. Circle the facts

Focus on the important facts needed to solve the problem: numbers, words or phrases.

## 4. Use a strategy to solve the problem

Think about how to solve the problem, which strategy will you use?

## 5. Evaluate

Encourage children to think about how they solved the problem; to check their answer and to share their solutions with a partner. Consider other ways or strategies they could have used to find a solution. This encourages children to reflect, to analyse, to ask questions and to explore alternate options.

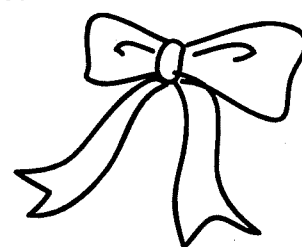
## Lesson 126 • Ruby's Ribbons

The strategies used in this lesson are:

### **Make an ordered list** and **Draw a diagram**

Making a list and then ordering this list from smallest to largest helps children to be methodical in their problem solving. Children then need to choose a way to show this information as a diagram in a way that is clear and accurate.

Children will need a ruler.

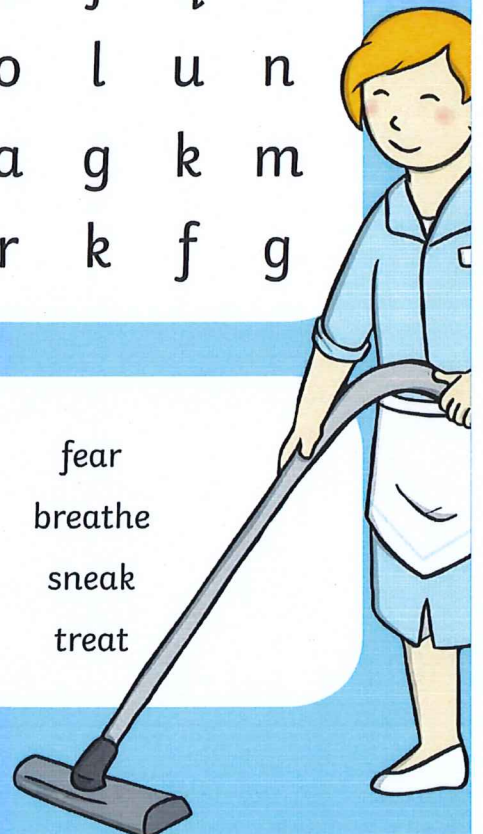


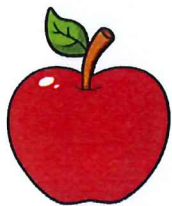
# ea

v q p l e a s e h l y k  
 r m r s p e a k d e p w  
 g m e a n t e a r a b z  
 w h b r e a t h e k e m  
 l c r e a m j v a h a h  
 e v h f c v z l m a t c  
 f h l e p b l e a k m l  
 e w e x a s q a j x j e  
 a u w a m p n d u f q a  
 r e a s t e e e o l u n  
 t r e a t e a r a g k m  
 x b e a k t r t r k f g



beak	bleak	heater	leader	fear
please	cheaper	mean	meat	breathe
speak	East	clean	beat	sneak
leak	dream	cream	tear	treat





## Reading Strategies



### *Predicting:*

Look at the front cover of the book. Use the title and the pictures to help you guess what the story might be about.

Share your thoughts with someone at home.

### *Visualising:*

As you are reading, try to visualise yourself as the main character. What would you see, hear, taste, smell and feel?

Fill out the Y chart to describe your visualisation.

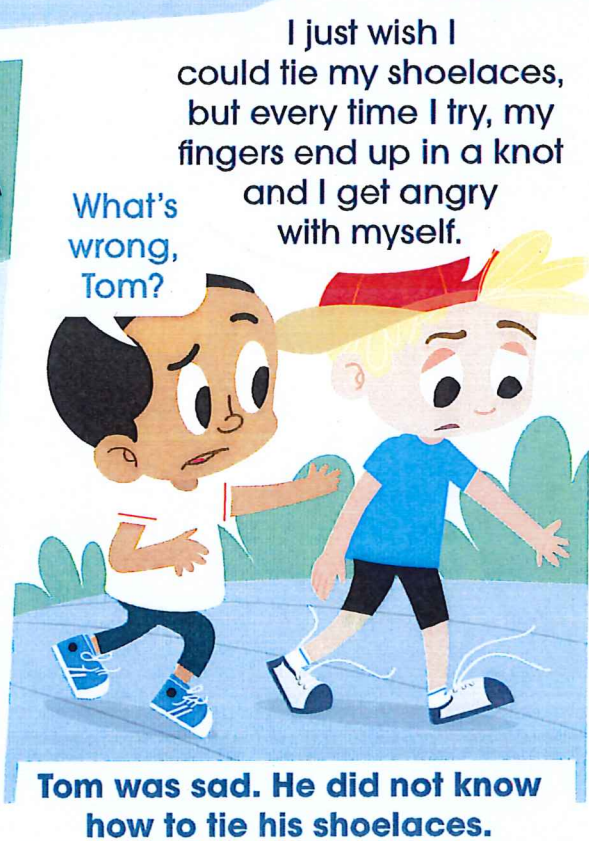
### *Connecting:*

Make a connection between the text and either yourself, the world or another book it reminds you of. Complete the making text connections worksheet.

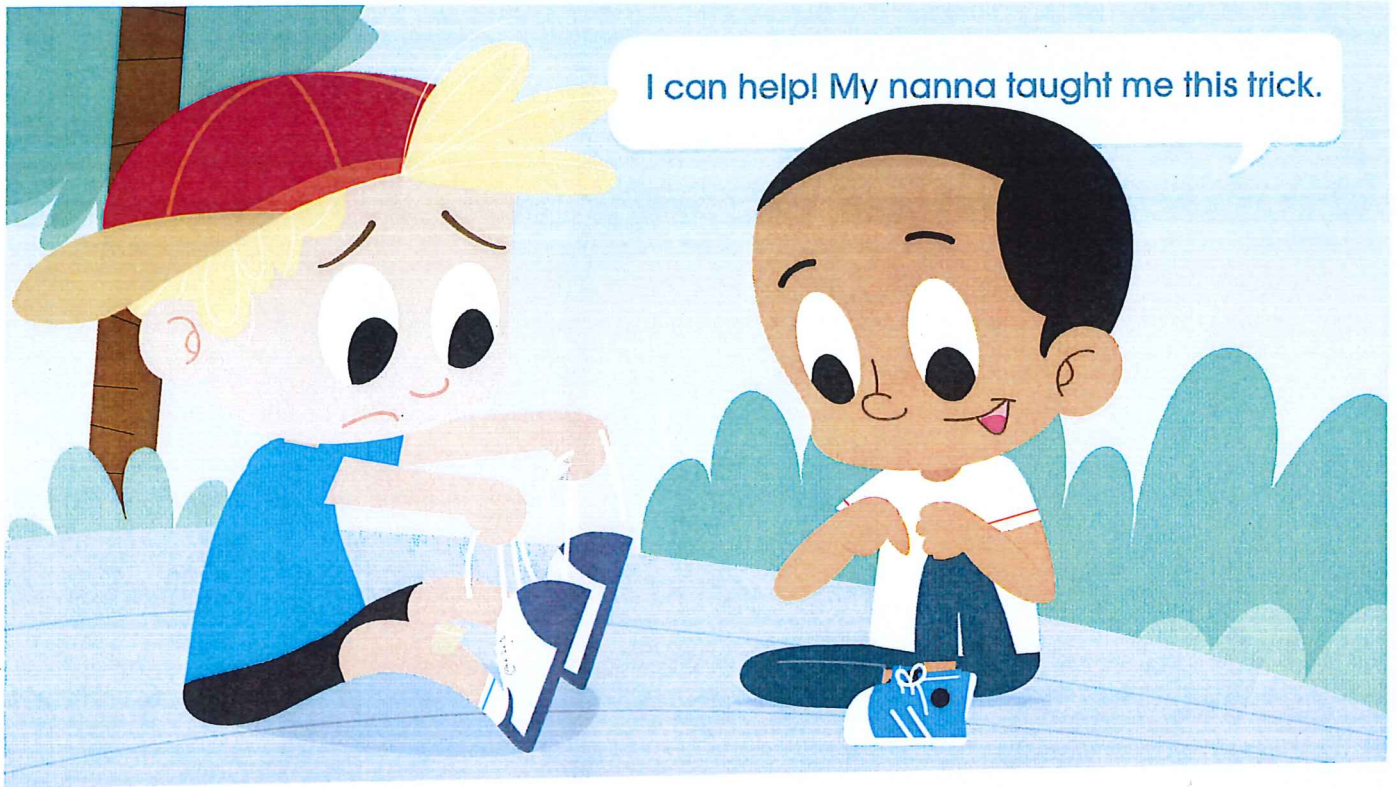




# Practise, Practise, Practise





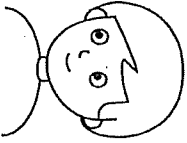
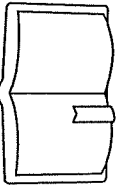



Tie a knot ... bunny ears ... extra knot for good luck. Tie a knot ... bunny ears ... extra knot for good luck.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

# Making Text Connections

<p><b>Text</b></p> <p>Draw or write about what happens in the text.</p>	<p><b>Type of Connection</b> (Circle one)</p>	<p><b>My Connection</b></p> <p>Draw or write about the connection that you are making.</p>
	<p> Text to Self</p> <p> Text to Text</p> <p> Text to World</p>	

Name: \_\_\_\_\_

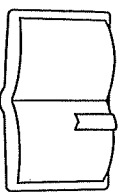
Date: \_\_\_\_\_

## Making Text Connections

Circle the  
Connection that  
You made:



Text to Self



Text to Text



Text to World

Write about what happens in the text.

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Describe the connection you have made with the text.

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Name \_\_\_\_\_

Date \_\_\_\_\_

# Title

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This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

# What material is best for keeping warm?



## Vocabulary

layers

puffer jacket

design features

materials

thermometer

temperature

## Materials needed

### ACTIVITY QUESTION 4

Each group will need:

- 2 plastic bottles
- large containers of warm water
- a range of fabrics or old clothes to be cut up
- polar fleece, cotton, woollen, synthetic, plastic, vinyl, lycra, nylon
- a range of materials for insulation
- wadding, bubble wrap, crumpled paper, foil, cotton wool
- elastic bands to hold it together
- thermometer

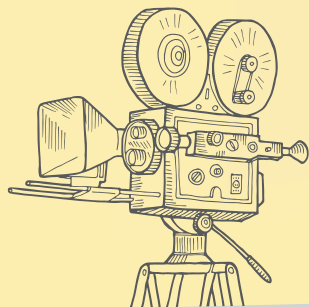




People often dress in layers so they can adjust their clothing to suit the weather. If the day starts hot but then gets cool, you can add more layers to keep warm.

**1**

Watch the video *100 Layers Challenge*.



It is recommended, to keep warm, you should wear three layers of clothes:

- inner layer
- middle layer
- outer layer

**2**

Look at the pictures of different clothes.

With a partner, talk about which one you would wear for each layer and why.



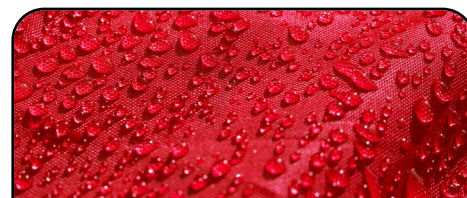
**What materials do you think I'm made from?**



Sometimes really warm jackets are made with their own three layers for extra warmth.

## Materials of a puffer jacket

For extra warmth, puffer jackets have built in layers.



### Outside layer

- Water proof
- Wind proof
- Light weight
- Tough



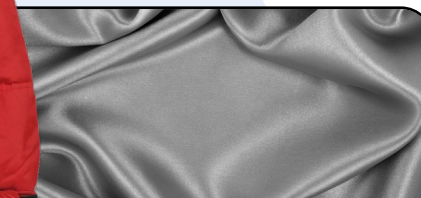
### Middle layer

- Thick
- Light weight
- Traps the air to keep the body warmth in and the cold out.



### Elastic

To make it fit tight and keep the warmth in and the cold out.



### Inner layer

- Soft
- Warm
- Thick or thin



**3** Look at the infographic for the puffer jacket.

With your class, discuss the design features a puffer jacket should have.



- 4** Using what you know about materials and design, complete the design brief below.

**Design brief**

With your group, design a puffer jacket to keep a bottle of water warm.

**Criteria**

List the design criteria (features the jacket must have).

**Materials**

List the materials your group will use.

**5** Draw your design and explain why you used each material.



## 6 Test your design

Fill two plastic bottles with warm water.

Put the bottle jacket on one of the bottles.

Use a thermometer to measure their temperature. Write in the table below.

Temperature	Bottle 1 (No jacket)	Bottle 2 (With jacket)
At start		
After 10 minutes		
After 20 minutes		
After 30 minutes		



## Results

Claim	Support	Question
What did your investigation prove?	How do you know this?	What more would you like to know?

**7** Write your results for the bottle with the jacket on a sticky note.

Display your results with your bottle and jacket for a class gallery walk.

After looking at other groups' bottle jackets, choose what you think is the best one and explain why. Give this group a 'Good Design Award'.

### Bottle with jacket

Group \_\_\_\_\_

Temperature:

• at start \_\_\_\_\_

• after 30 minutes \_\_\_\_\_

Difference \_\_\_\_\_

### Good Design Award

Write two things your group could do to improve the design of your bottle jacket.

1. \_\_\_\_\_

2. \_\_\_\_\_

**8** Think of four different ways you could use a bottle warmer.

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- 9** Design a warm jacket for people to wear that uses recycled materials and renewable energy.