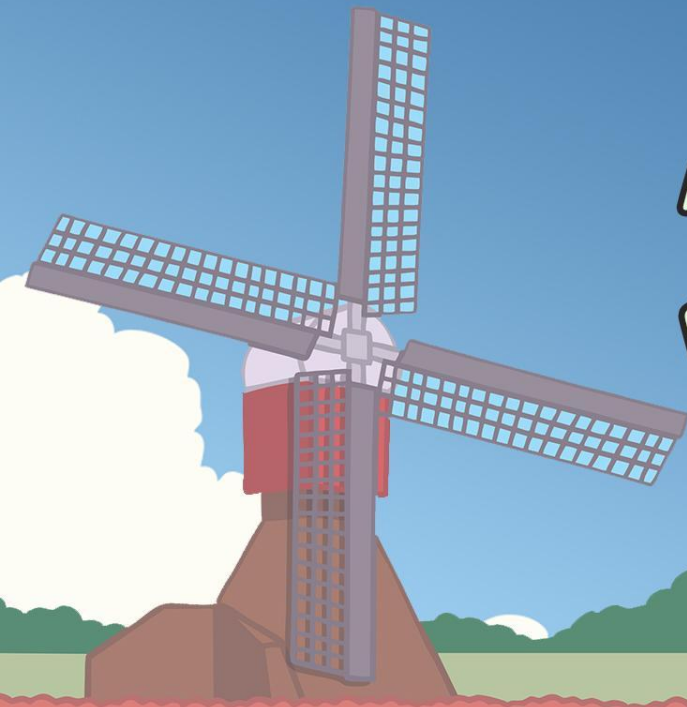


All About Windmills

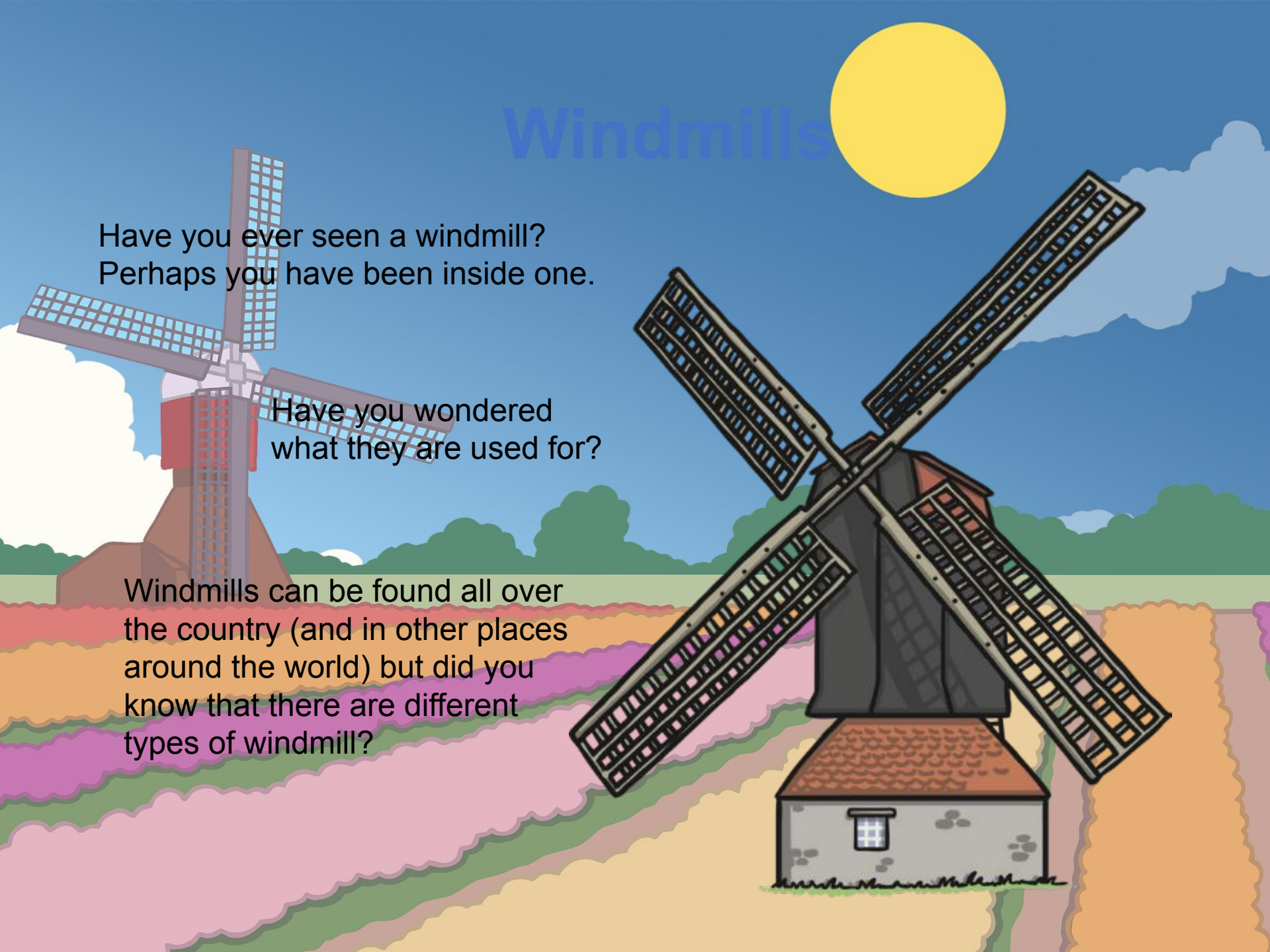


Windmills

Have you ever seen a windmill?
Perhaps you have been inside one.

Have you wondered
what they are used for?

Windmills can be found all over
the country (and in other places
around the world) but did you
know that there are different
types of windmill?



What Are Windmills Used For?



Windmills are used to harness the wind's energy.

The energy can then be used to power machinery used to do different jobs, for example: to grind grain, make electricity or move water.

How Do Windmills Work?

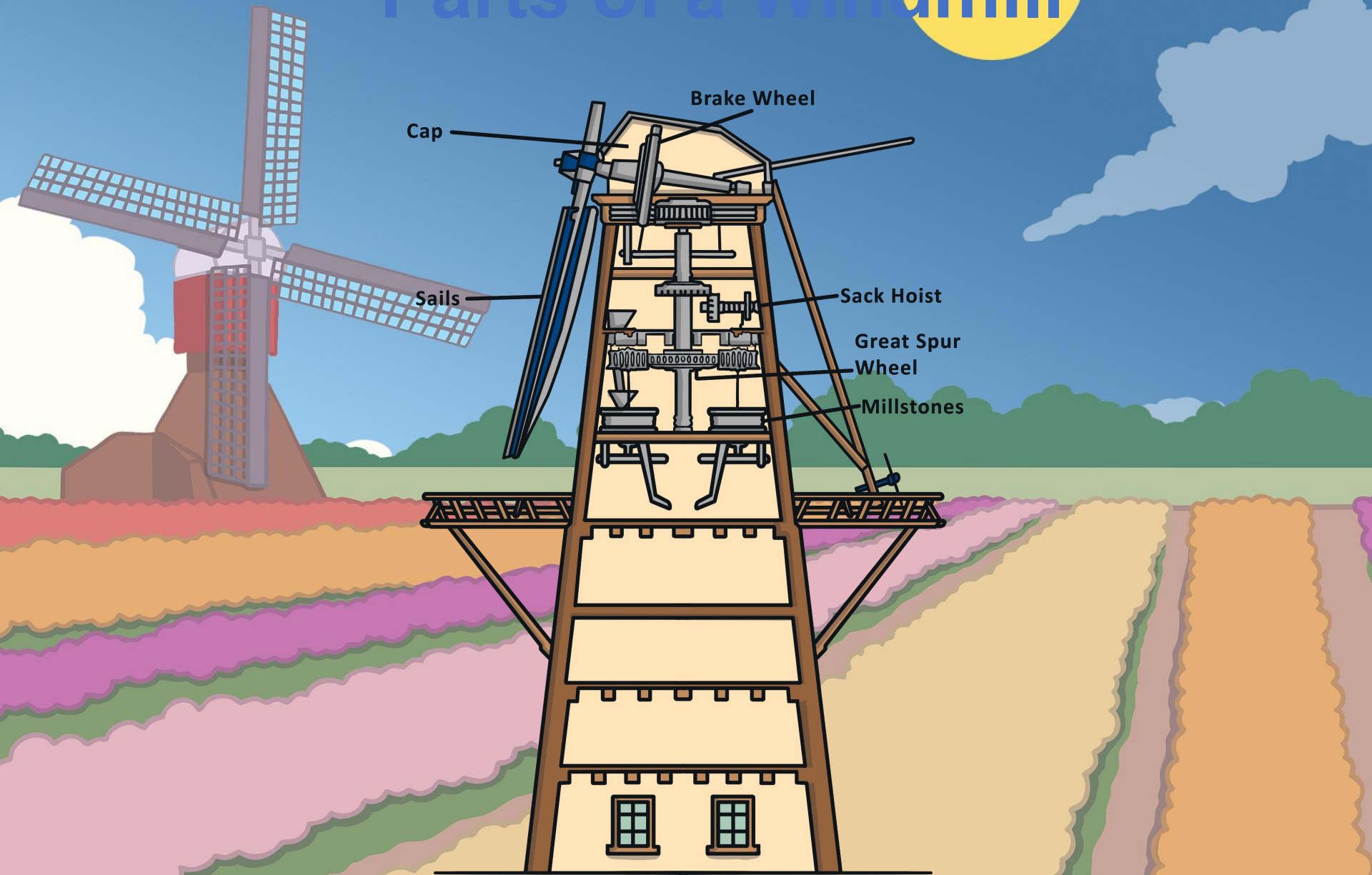


When the wind blows, it causes the blades (or sails) of the windmill to turn. Using gears and cogs, this then turns a centre shaft.

The centre shaft is connected to something that needs energy to work, e.g. a millstone or water pump. As the shaft turns, it causes these items to turn or work too. For example:

- The millstones crush grain, separating the husks from the flour.
- It powers a pump which moves water from one place to another.

Parts of a Windmill



- Cap
- Brake Wheel
- Sails
- Sack Hoist
- Great Spur Wheel
- Millstones

The History of Windmills

Windmills were invented as a way of using nature as power rather than having to use human energy.

The first windmills had rectangular shaped blades.

Windmills were used in England (and other parts of Europe) from the 12th Century.

The first windmills were made from wood, but have since been made from bricks, stones and even steel.

Traditional windmill use has fallen since people began to use steam power and later, electrical power.



Different Types of Windmills

The main types of windmill are:



Post Mill



Tower Mill



Smock Mill

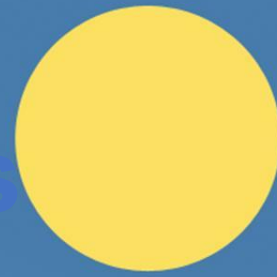
Windmills Today

Most windmills today are used to produce electricity without causing pollution. Wind turbines are a type of modern windmill. They are used to create mechanical power that can be changed into electricity which is used to power homes and technology.

Because wind occurs naturally, it will never 'run out' so will be used well into the future.



Fun Facts



Fan Mills are much smaller than the other types of windmill and are mainly used to pump water.

Some wind turbines have arms that are longer than a football pitch.



Some non-working windmills have been converted into homes. Would you like to live in a windmill?

There are lots of stories with windmills in them and songs about windmills: A Windmill in Old Amsterdam, The Little Red Hen, etc. Can you think of any more?

Windmill Craft

Why not try one of these windmill craft ideas?

Paper Windmill Craft Instructions

You will need:

- Windmill Template
- scissors
- glue stick
- a straw
- a thin pin (e.g. tackling pin used for sewing)
- sticky tack or hot glue gun

Instructions:

- 1 Print the Windmill Template and cut out around the outer edge of both pieces. You may wish to decorate the piece.
- 2 Cut down the diagonal lines on Piece A, stopping at the circle in the middle.
- 3 Find one of the corners marked with a dot on Piece A. Bend that corner down to the circle in the centre and secure with glue. It's important to bend the paper over, not to fold it.
- 4 Repeat step 3 with all the four corners marked with a dot.
- 5 Using glue, stick Piece B in the middle of Piece A, so that it covers the centre circle and the corners that you just glued down. Allow to dry.

Windmill

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- glue stick
- a straw
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Instructions:

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- 2 Cut down the diagonal lines on Piece A, stopping at the circle in the middle.

Straw Windmill Experiment

You will need:

- Straw
- Drawing pin
- Cardboard tube
- String
- Pencil sharpener
- Empty yogurt container
- Paperclips
- Pencil
- Thin cardboard (20cm x 20cm)

Method:

- 1 Assist children in drawing a cross on a square of thin card. Co-actively support the children in cutting a slit a quarter of the way along each line. See picture.
- 2 Explain to the children that they must fold every other side

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Method:

- 1 Assist children in drawing a cross on a square of thin card. Co-actively support the children in cutting a slit a quarter of the way along each line. See picture.
- 2 Explain to the children that they must fold every other side of the card along each line. See picture.
- 3 Assist children in making a small hole in the middle with a sharpener. Push a straw through the hole and fix it.
- 4 Using a drawing pin, pin the children to straw so you make sure both opposite ends of the top of the cardboard tube. Help children to glue a pencil through the hole to secure them.
- 5 Instruct the children to push the straw through both holes. Ask them if they can make the straw horizontal on the cardboard tube.
- 6 Explain to the children that when the card is cut, the straw can spin. The straw can make a windmill.

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