

Kite Shapes



Aim

- I can investigate kite shapes.
- I can select from and use different materials and components.

Success Criteria

- I can name at least three different kite shapes.
- I can explain the strengths of different shaped kites.
- I can select different materials to make my kite out of.
- I can use construction equipment to create kite shapes.

How a Kite Flies

Kites need to have a large area that catches the wind. This is called the body, cover or wind receiving plane.

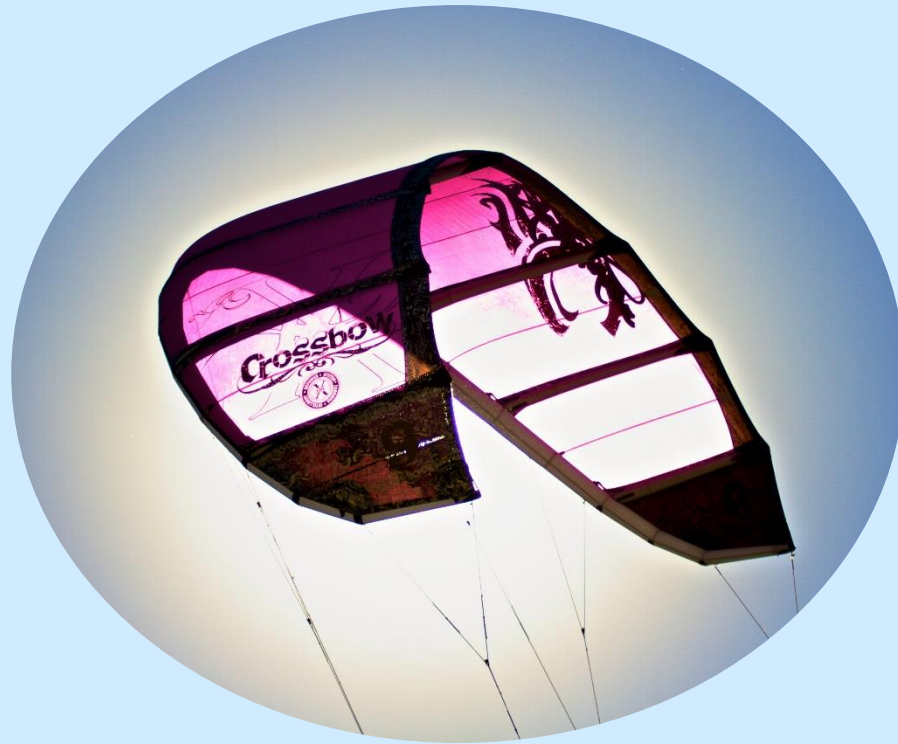


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How a Kite Flies

The kite can be made more stable by creating an area that helps to control it when riding the wind. The kite will then keep its position rather than sliding away with the wind.

The area that helps the kite to ride the wind can be made in two main ways:

Making a keel, which forms a piece at right angles to the main kite area.



Building a bow into the kite or giving the kite a flexible body so that it curves with the wind and is three dimensional.



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How a Kite Flies

As someone runs with a kite, the wind going head-on into the kite creates a **force** that pushes up on the kite.

This force is called **lift**.

This lift force goes perpendicular to the wind and it pushes the kite up into the air. At the same time, another force pulls the kite back.

This force is called **drag**

Drag is caused by the wind catching on the kite itself, pushing the kite back in the direction that the wind is going.

Altogether, these forces cause the kite to go back and up when you fly it.





Kite Names

Diamond

The Diamond kite is probably the most recognised type of kite. For many years it has remained popular due to its stable and reliable flying characteristics.

Just about any flat kite will fly in a more stable way with a bow built into it.

The Diamond kite is no exception.

With the cross spar bent back, away from the flying line, the kite will require less tail to fly successfully.

With enough bow, no tail is necessary at all.

A lightly constructed *flat* diamond will sometimes bow a little anyway in strong wind thus giving itself a little more stability.



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Kite Names



Rokkaku

The Rokkaku kite is a traditional Japanese fighting kite .

The Rok, as it is often referred to, is a tailless bowed design.

The bow adds stability, making it an easy kite to fly.

The Rokkaku is hexagonal in shape.



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Kite Names

Delta

The fourth letter of the Greek alphabet looks like a triangle and is called Delta, hence the name of this kite!

The Delta design is an efficient one that outperforms most other flat kites in light winds.

The Delta can be made with or without a keel.



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Kite Names

Sled

The original type of Sled has 2 straight spars running the length of the kite, and a tail hanging from the bottom end of each spar.

Air pressure then keeps the sail open and holds the kite's shape while it flies.

The Sled requires almost no setup time before flying!

That's the beauty of Sleds of all kinds.

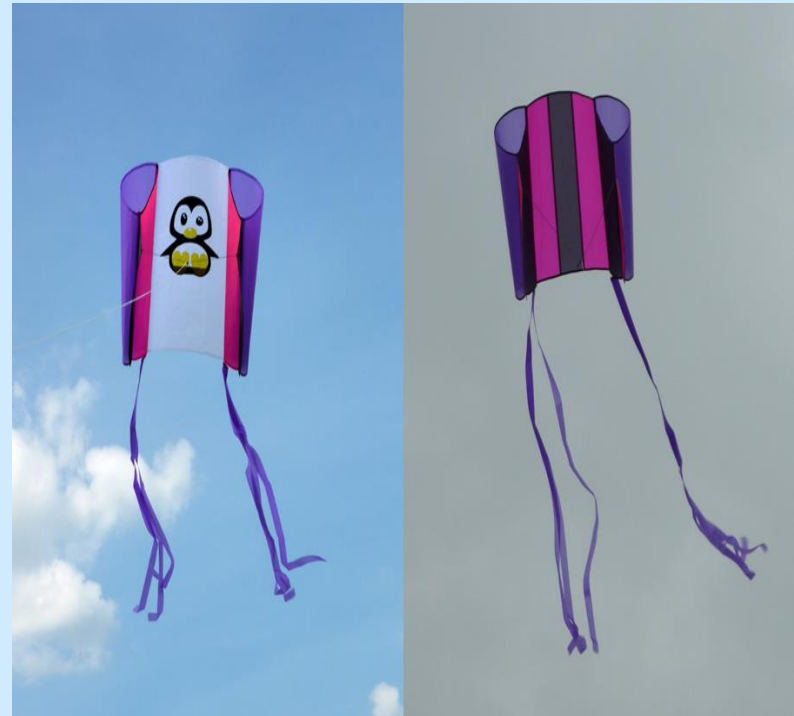
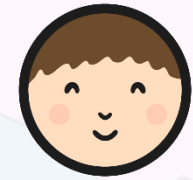


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Kite Shape Challenges








Name the different kites and the strengths of each on the Kite Shapes Activity Sheet.

Use the construction kits recommended and the Kite Outline Activity Sheet to make the shapes of the different kites.

Kite Shapes

Write the correct names of the different kites in the table at the bottom.
If you can remember the benefits of each kite then add them underneath the name in the table.

| | | | |
|---|---|---|---|
| 1 |  |  | 4 |
| 2 |  |  | |
| 3 |  | | 5 |

Names of the different kites:

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| | | | | |

Benefits of each kite:


| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| | | | | |

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Kite Outlines

- Using different materials such as newspaper, tissue paper, dustbin liners, plastic bags, wrapping paper and wallpaper draw and cut out the shapes of the different kites.
- Make the shapes from construction kits.
- You can decide what size you want the kites to be.


Diamond




Rokkaku



Delta

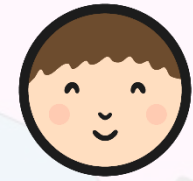


Sled



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Kite Shape Challenges



Look at the Kite Outline Activity Sheet. Use different materials such as newspaper, tissue paper, dustbin liners, plastic bags, wrapping paper and wallpaper to draw and cut out the shapes of the different kites.

Kite Outlines

- Using different materials such as newspaper, tissue paper, dustbin liners, plastic bags, wrapping paper and wallpaper draw and cut out the shapes of the different kites.
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Diamond

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Delta

Sled

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Follow the instructions on the Making a Kite Activity Sheet to make a simple kite.

Making a Kite

You Will Need:

- An A4 piece of paper. Any paper works but thicker paper or card makes the kite sturdier.
- A wooden skewer. A straight drinking straw works too.
- Kite string. If not, almost any strong but light string would work, such as fishing line.
- Ribbons. Most wide ribbon would work fine. Flipping tape is also good because it's made of plastic, which is lighter for a longer tail and durable. It also comes in bright, fluorescent colours.
- Scissors or a hole punch.
- Sticky tape.

Step 1
Start with your piece of paper and fold it in half.

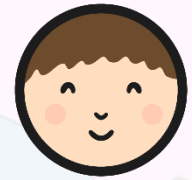
Step 2
Mark a point on the top of the paper about 2.5 cm from the fold. Mark a point on the bottom of the paper about 2.5 cm from the open side. Imagine, or draw, a line connecting these two dots.

Step 3
Fold the top corner of the paper down along the line that you've just created.

Step 4
Next, flip the paper over and fold the other side down to match the side you just folded.

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Kite Shape Challenges

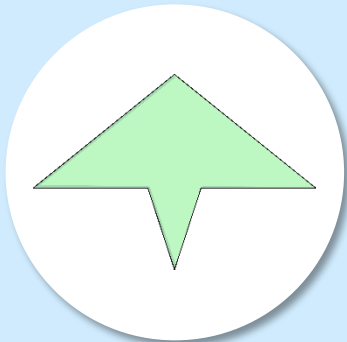


Which shape was the hardest/easiest to make?

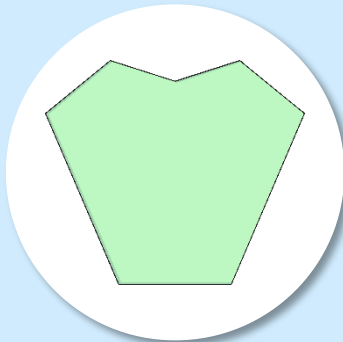
Why?

Which material was the hardest/easiest to make?

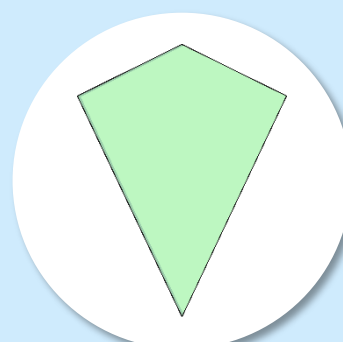
Why?



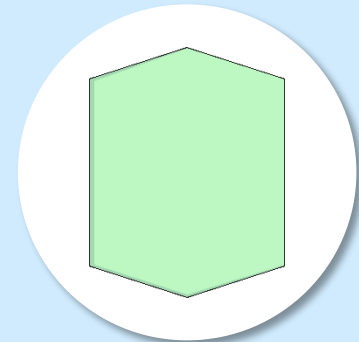
Delta



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Rokkaku

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