

Curriculum

Week commencing 30th November 2020

Science

Overall Objective:

I can identify the effects of air resistance.



- Understand that air resistance is a type of **friction**.
- To know that the **shape** of an object affects its air resistance.



Air Resistance

As you move, you create **air resistance**. When you run or ride your bike, it is air resistance that pushes your hair back and makes your clothes ripple. The **faster** you move, the **more** air resistance you feel.





This is a space capsule falling back to Earth. It is carrying astronauts back from a space mission.

Which part of the space capsule is creating the **most air resistance**?

Why is it important for the capsule to create **air resistance**?

Photo courtesy of Soyuz_TMA-21(@flickr.com) - granted under creative commons licence - attribution

When objects move through the air, an invisible force acts upon it and this is air resistance. This is when **air particles** hit the object and create air resistance. The **air particles** that hit an open parachute make it difficult for it to move through the air, because of its **shape and size**.

The shape of an object affects its air resistance. Some objects are **streamlined** which means that they will have less **air resistance** and move through the air easily. Objects that are not streamlined will have more air resistance.

What objects can you think of that are streamlined to help them move through the air?



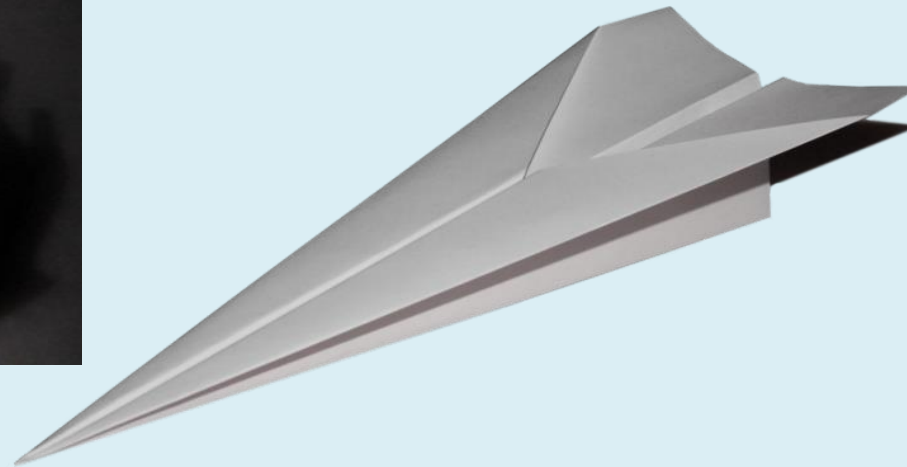
Photo courtesy of SLS AMG (@flickr.com) - granted under creative commons licence - attribution

Air resistance affects how fast objects fall through the air. Objects with a lot of air resistance fall slower than streamlined objects, which have little air resistance and will fall quicker.

These two pieces of paper started off the same but they have been made into two different shapes. Which one will fall the fastest? Why?



Scrunched up paper



Paper Aeroplane

KEY WORDS

Air Resistance

Shape

Size

Streamlined

Task 1

Write an explanation of gravity and air resistance.

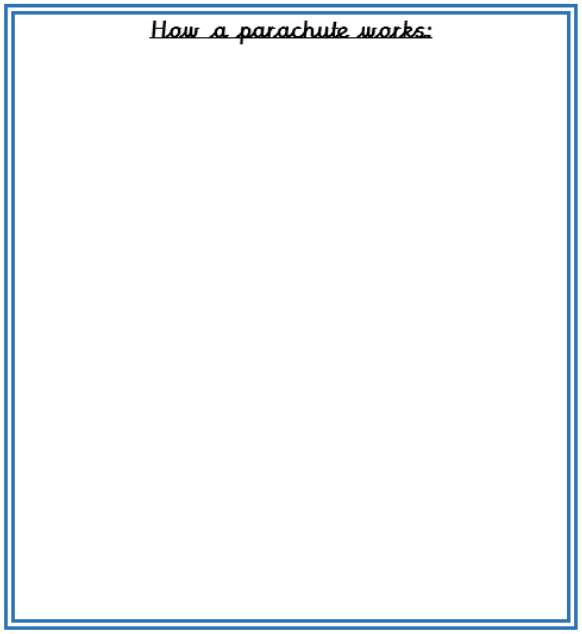
Gravity is:

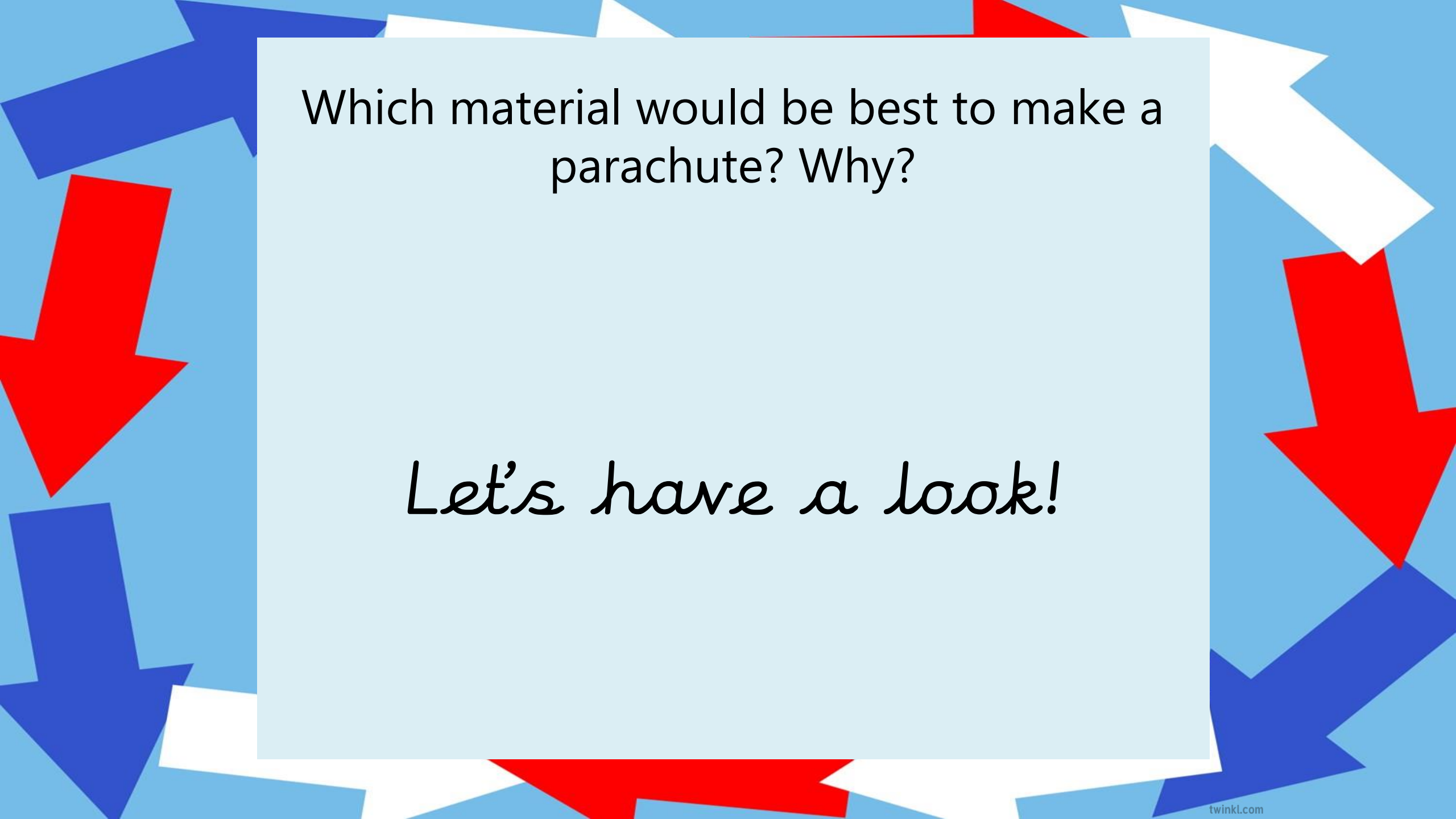
Air resistance is:

Task 2

Draw a diagram to explain how a parachute works. Make sure you include the difference forces acting upon the parachute.

How a parachute works:





Which material would be best to make a parachute? Why?

Let's have a look!

Materials

We use wood, metal, plastic, glass and fabric to make most everyday objects.

Different materials have different properties.

Materials can be natural or man-made.

Here are a few facts about some materials:



Rubber

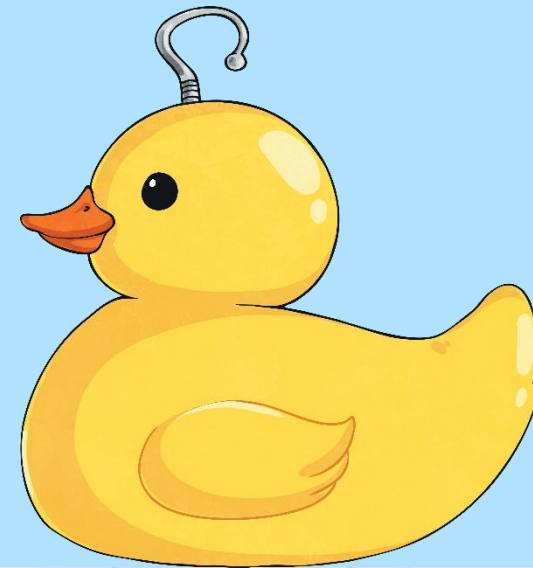
Natural rubber is made from a runny, milky liquid called latex which comes from some plants.

Most of the world's natural rubber comes from the rubber tree!

Things made from natural rubber are:

- pencil erasers
- gloves
- Birthday balloons
- car tyres
- swimming caps

Rubber is used as it is strong and very stretchy.



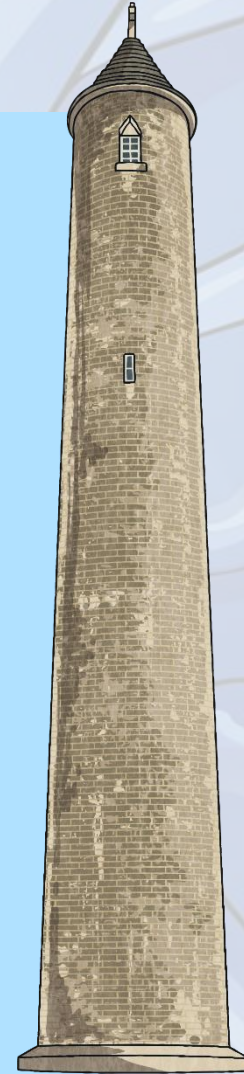
Stone

Stone is a natural material. It comes from the ground.

A few things made from stone are:

- buildings
- walls
- paving stones
- concrete

Stone is used as it is very hard and strong. It is resistant to bad weather and takes a long time to erode.

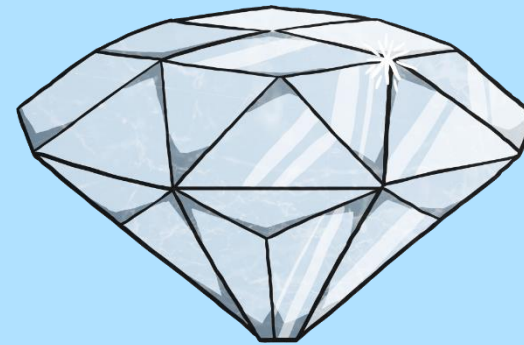


Diamonds

Diamonds are a natural material. They come from deep inside the earth.

A few things made from diamonds are:

- necklaces
- rings
- earrings
- drill bits



Diamonds are used in jewellery as they are very beautiful and sparkly. Diamonds are also very hard so are used for cutting and polishing other materials.

Wood

Wood is a natural material. It comes from trees.

A few things made from wood are:

- furniture
- boats
- instruments
- paper

Wood is used as it can be carved in to any shape, is strong and has a very nice appearance.



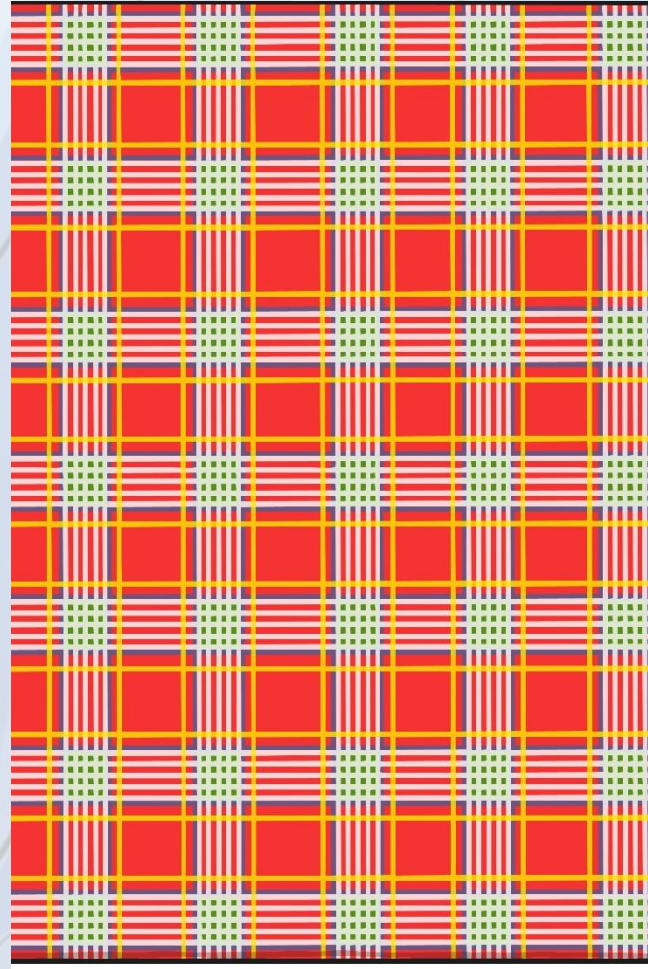
Fabric

Fabric comes from plants and animals.

A few things made from fabric are:

- Curtains
- Clothes
- Towels

Fabric is used as it is very light, warm, soft and quite easy to produce and sew.



Plastic

Plastics are man-made, mostly from oil.

A few things made from plastic are:

- Balls
- Bottles
- Carrier bags

Plastic is used as it can be made to be flexible, hard, rough or smooth. It is also very cheap to produce and easily washable.



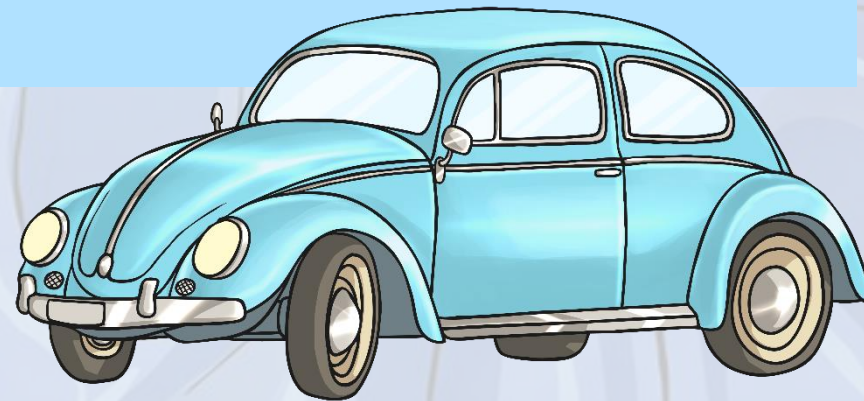
Metal

Metals are made from rocks. The rocks are dug up and taken to a factory where they are heated and processed into metal.

A few things made from metal are:

- Jewellery
- Cutlery
- Cars

Metal is used as it is strong, hard, smooth and easily washable.



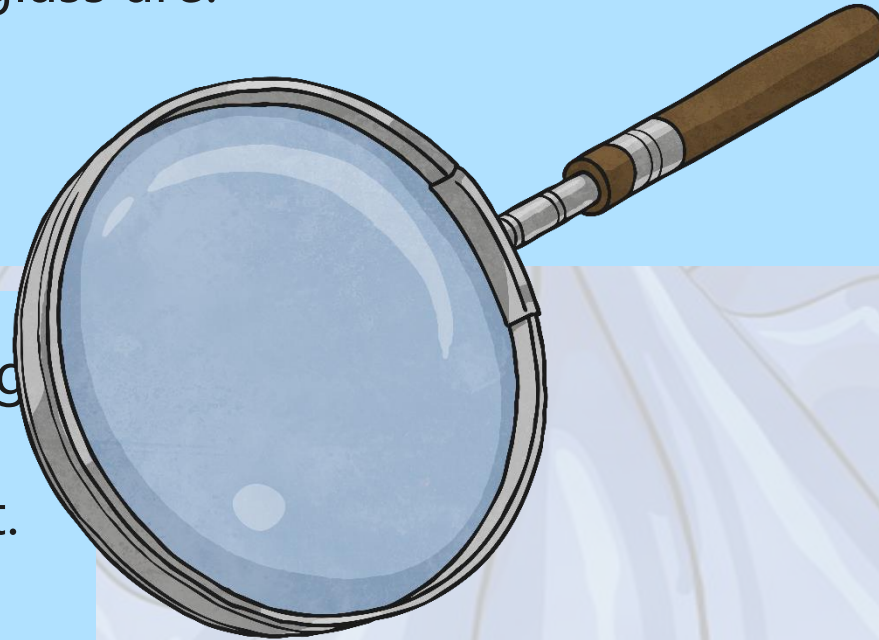
Glass

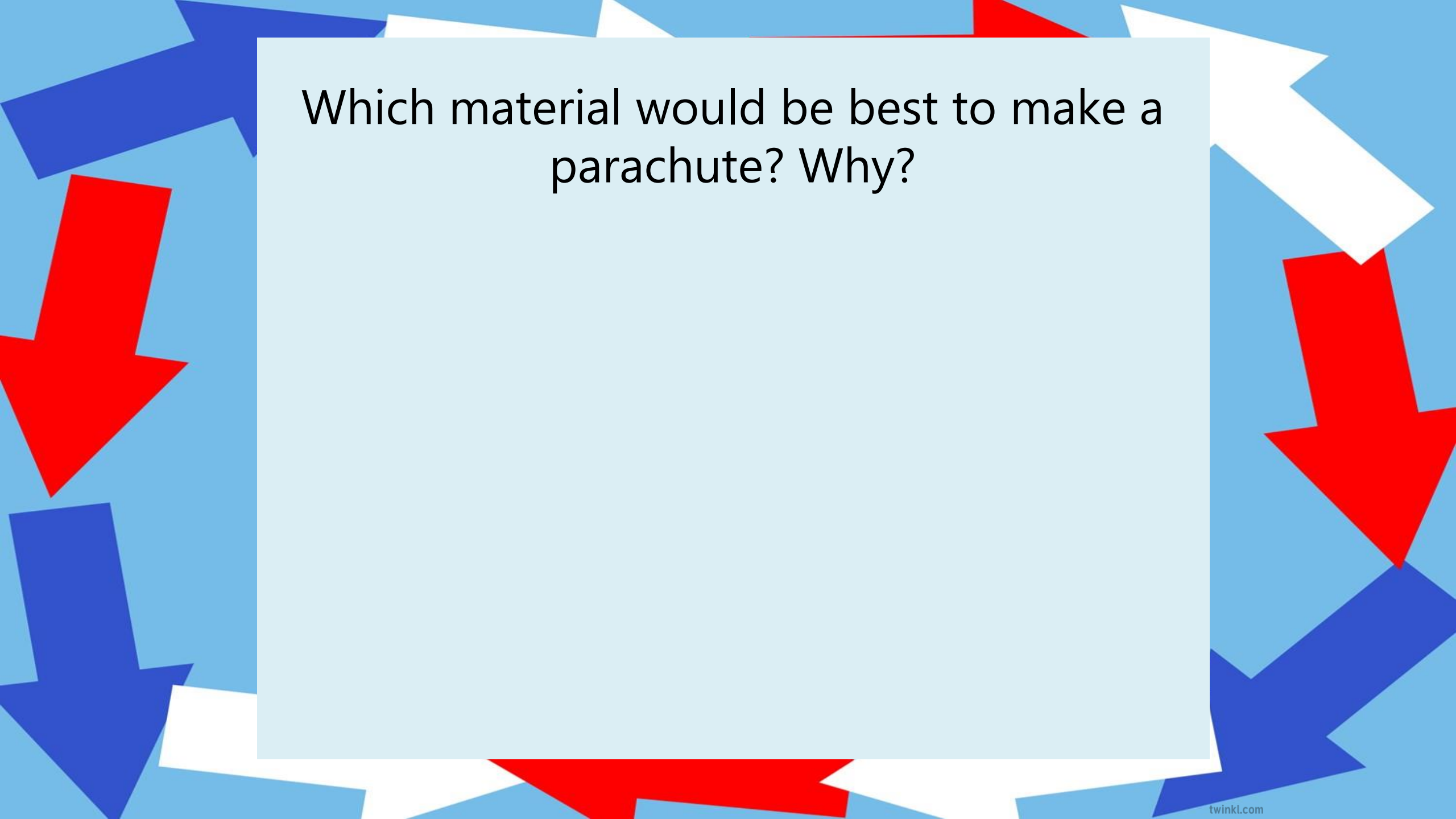
Glass is made from very fine sand. It is heated until it melts.

A few things made from glass are:

- Bottles
- Light bulbs
- Glasses

Glass is used as it is strong, hard, smooth, easily washable and transparent.



The background of the slide is a light blue color. It is decorated with several large, stylized arrows pointing downwards. The arrows are in three colors: blue, red, and white. They are arranged in a pattern that suggests a downward flow or direction. The text is centered in a white rectangular box.

Which material would be best to make a parachute? Why?

Task 3

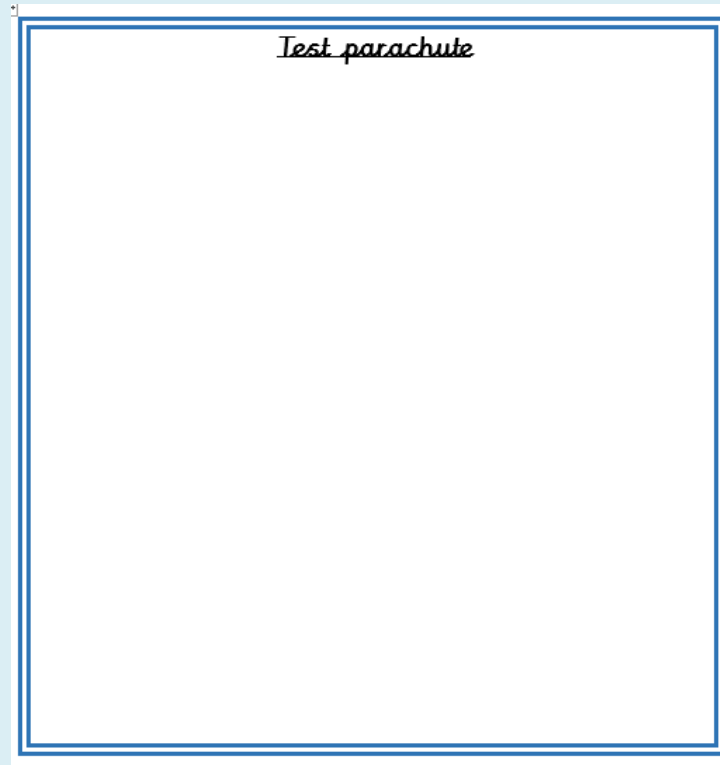
We would like you to design, make and test your own parachute.

Which material will you choose and why? Think about the forces that will act upon your parachute.



Task 4

Draw a picture of your test parachute.



Task 5

Once you have tested your parachute, evaluate its effectiveness. If you were to plan a future enquiry based on this experiment, what could you do differently?

Parachute test - Evaluation

Planning a future enquiry

Curriculum

Friday 4th December 2020

Jigsaw - Celebrating Difference- Week 5

LO:

I can compare my life with people in the developing world.

I can appreciate the value of happiness regardless of material wealth.





Happiness

What does happiness mean to you?

How important is money to happiness?

Can money make you happy?



<https://www.bbc.co.uk/teach/class-clips-video/pshe-ks3-ks4-gcse-use-of-child-labour-on-cocoa-plantations-in-ghana-part-one/zff347h>

Watch the clip above then discuss

How important do you think money is to children in the culture you are finding out about?

Do you think more money would make them happy?

Are there more important things than money and material things for the children in the country you are learning about?

Do you think that you are happier than these children?
Why/Why not?

Are there any ways that you think the children might be happier than you?

Jigsaw Joseph

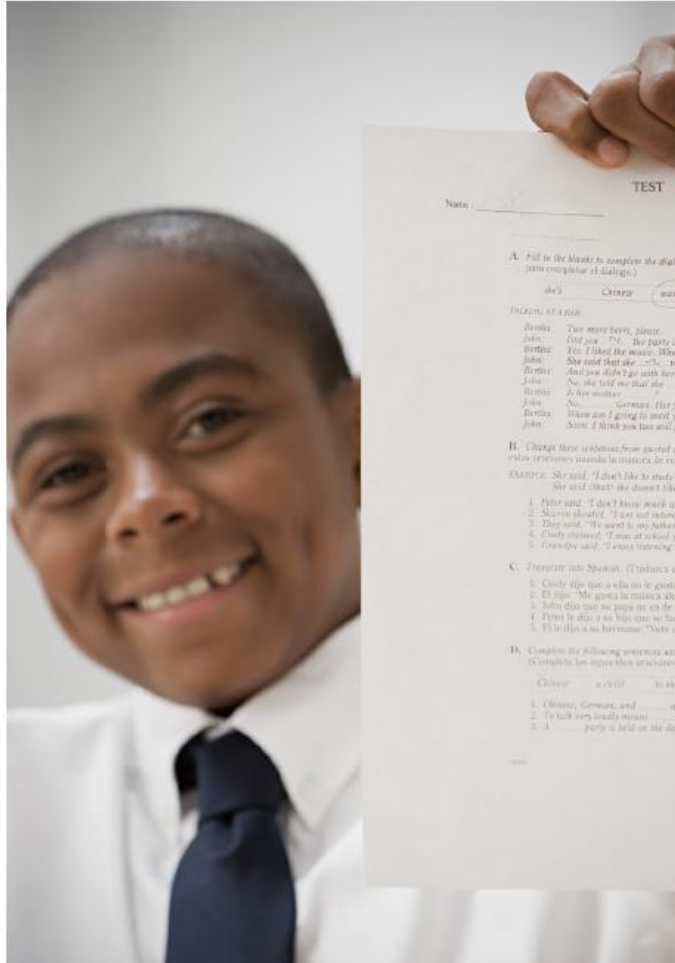
Here are facts about the life of a different child, called Joseph, in Ghana.

Fact Sheet 2

Hello my name is Joseph and I am 10 years old. I live in Ghana's capital city, Accra. Accra is a large city and it is also on the coast. My family choose not to live in town because it is busy and noisy. Instead we live on the city's outskirts in a large modern house with its own front and back garden. We have a swimming pool, which is great, because I love to swim especially when the weather gets very hot.

When people in other countries imagine Africa, they sometimes think that everyone is poor. My parents have good jobs in the city so we have plenty of money to afford luxuries. For my last birthday I had a new mobile phone, one of the top-of-the range ones. Most of my friends in school also have mobiles and we chat a lot on social media. I also have a pony.

I go to a private school in Accra. My parents earn enough money to pay the school fees for me to go. School hours are long and I'm usually in school by 8.30 am and because of homework club and other school activities I don't get home until 6pm. I get dropped off and collected from school by Monica. Monica is my Nanny. That's not a grandparent, she is paid to look after me by my parents because they have very busy jobs and aren't around much to take care of me. Monica is really nice and she cooks me really good food, but I do wish Mum and Dad would spend more time at home.





Both my parents travel a lot for work and they are always going abroad. If it's school holiday time I can sometimes go with them. I have been to the USA and England, Australia and South Africa. My best trip was when we went to Disney World in Florida. Mum and Dad had business in America so Monica took me to Florida for a week. Mum managed to join us for a couple of days and it was really good to spend time with her by myself.



At school we learn English. I speak English fluently and all our lessons in school are taught in this language. This will be helpful because when I am older, I would like to become an astronomer like Professor Stephen Hawking. I am good at maths and physics, and to pursue my dream I want to go to a University in America or England. Mum and Dad really want me to go to a top University, and they have already said if I need extra lessons to make sure I am good enough, they will pay for a private tutor to teach me at home in my spare time. I hope I can learn enough at school because I am not very keen on having extra lessons!

On the weekends and holidays, if Mum and Dad aren't around, Monica takes me out sometimes to the movies or to watch soccer, my favourite sport. After school in the evenings I am usually quite tired because school is so busy. Most of my leisure time is spent messaging my school friends or watching satellite TV, which I have in my bedroom. Monica also lets me use the internet and I have a games console, but she is very strict about how much time I can spend on it! On most Saturday's I go riding on my pony at a local club.

Mum and Dad want me to learn lots of skills, so on three evenings a week I do other activities. On Monday's I go to soccer, on Tuesday's I have piano lessons, and on Friday's I go to painting class. On Sunday's I go to Sunday School, because my family is Christian. My life is so busy, sometimes I wonder how I fit everything

Does anything surprise you?

What does stereotyping mean?



It can be easy to stereotype people from different cultures because of the things we see and read.

We should always realise that all cultures have many different people and situations, some of which we may not always get to learn about.

Curriculum

Reflect

LO:

I can compare my life with people in the developing world.

I can appreciate the value of happiness regardless of material wealth.

Does money affect happiness?

Is there anything that might make the city child happier?

Is this material or are there other important things?

Are there richer and poorer people in every culture?

