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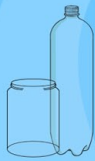
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How to conduct a...

# Pirate Density Investigation



You will need:



an empty bottle or jar



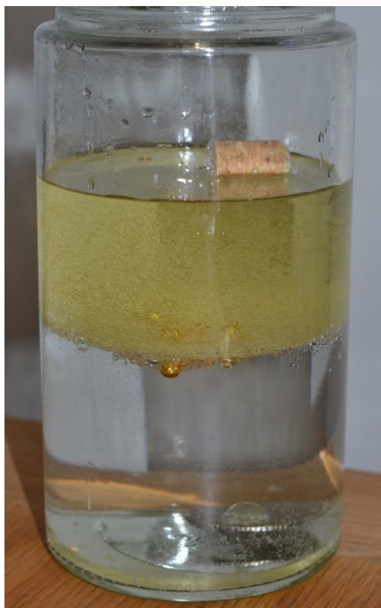
water



oil

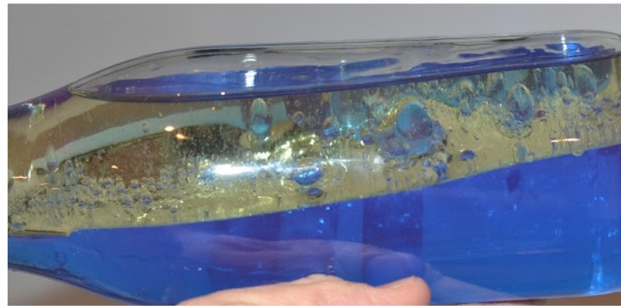


pirate objects to test



## Method:

1. Half fill your container with water, then add some oil.
2. Carefully drop your objects into the jar, what happens?



## The Science Bit



**Investigation!** Can you put your hand in to the jar?

What do you notice about the oil and water?

Can you find something to float on each layer?

Can you mimic the motion of the waves? What happens if you mix the oil and water?



# Investigating...



# Which Materials Make the Best Pirate Ship?



You will need:

elastic bands



plasticine



paper



skewers



optional pirate decorations



black cardboard



corks



glue



wooden lolly sticks



anything else you want to try



washing up sponges



## Method:

1. Construct your boats using your different materials.
2. Test your boats on the water.



## The Science Bit



Investigation! Can you blow on the boats with a straw?

Which are the most stable?

What happens when you blow gently and then with more force?

Can you use the straw to create waves across the water?



## How to...



# Waterproof a Pirate Ship



### You will need:

paper with a picture on it



materials such as kitchen roll, plastic, bubble wrap, tissue paper cut into squares



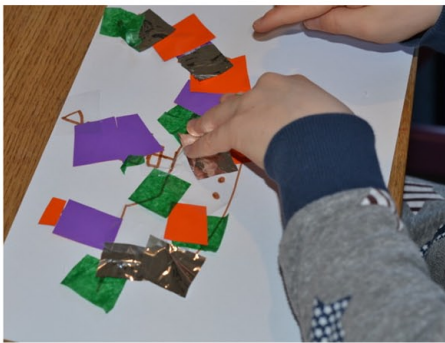
glue



squeezy water bottle



water



### Method:

1. Draw your pirate ship.
2. Place the squares of material over the picture using glue.
3. Spray water over the picture and observe any changes to the paper.



### The Science Bit



**Investigation!** Does it make a difference if you use more than one layer of the materials that were less good at repelling water?

Can you cut some shapes out of the plastic, stick them on paper and paint over the top to make a picture?

Can you think of any natural waterproof materials?



# Investigating...



# Fizzy Pirate Coins



You will need: baking soda



water



coins



food colouring



flour (optional)



vinegar



## Method:

1. Clean some pennies to be shiny pirate coins, to do this place them in cola or vinegar.
2. For the rocks, pour your baking soda into a bowl and add water slowly until it makes a paste. (If you want to pad out the baking soda, add some flour when you mix. As long as it's not more than half and half you should still get a good reaction).
3. Add a couple of drops of food colouring and mix well.
4. Either mould with your hands or use cake moulds to create shapes, press a coin into each.
5. Leave in the fridge overnight.
6. Use a dropper to drop vinegar onto your pirate rocks.

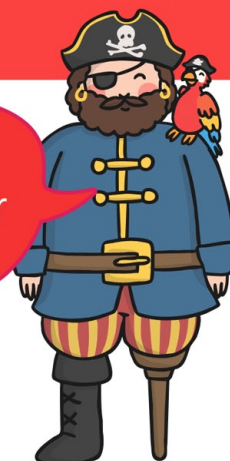


## The Science Bit



**Why does this happen?** Vinegar (an acid) and Bicarbonate of soda (an alkali), react together to neutralise each other. This reaction releases carbon dioxide gas, which causes the bubbles you see.

Which worked best at cleaning the coins? The cola or vinegar?



Learning magnetism with a...

# Pirate Magnet Maze



You will need:

thick cardboard



a magnet



metal paperclip



cardboard



pirate maze



Method:

1. Draw a pirate ship on a small piece of cardboard and attach a metal paperclip.
2. Place the magnet on the underside of the maze and use it to guide the ship around the maze.



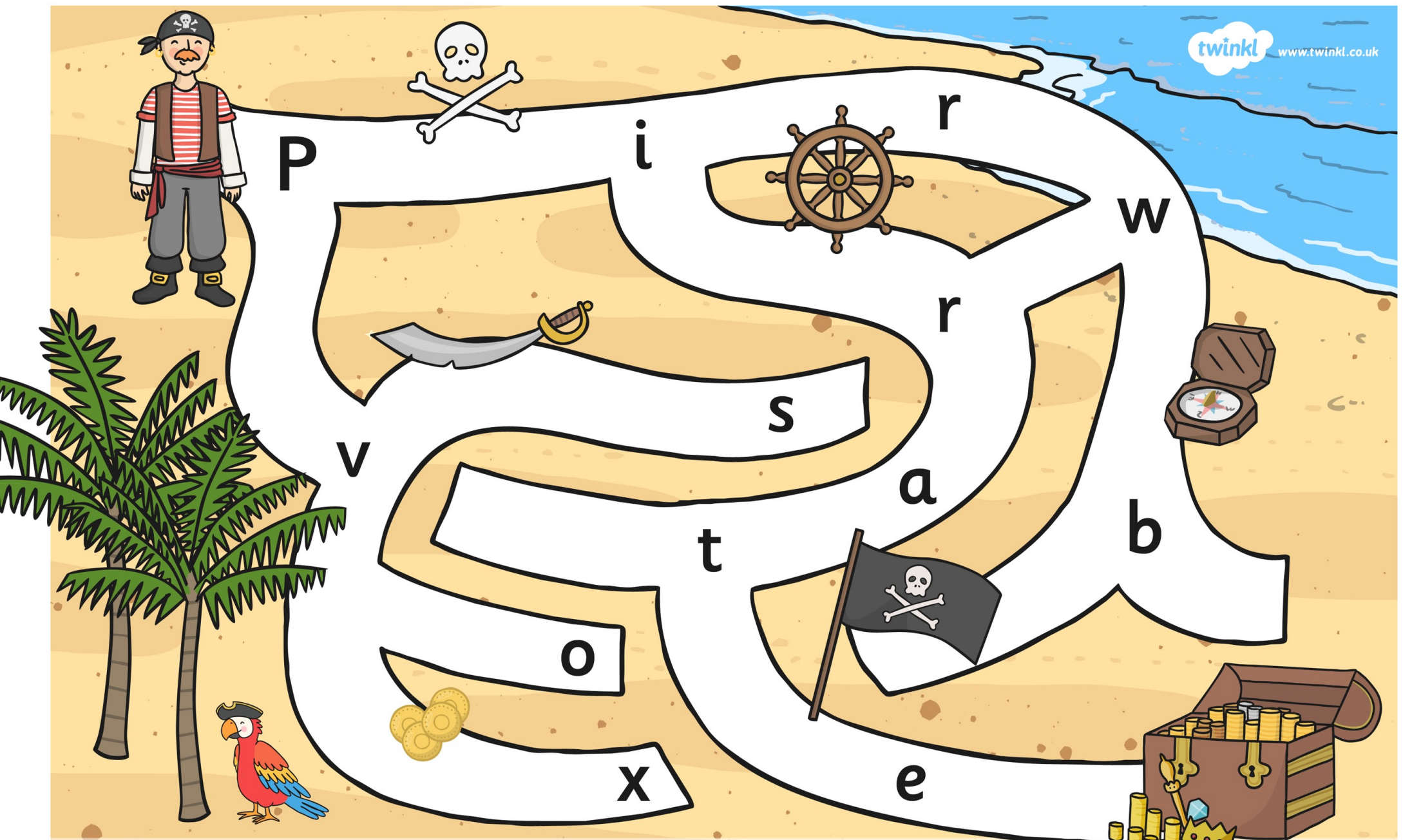
The Science Bit



Did you know? Magnets attract some metals and can be different strengths. Magnets have two poles, we call them the north pole and south pole. opposite poles attract each other and the same poles repel.

Remember - not all metals are attracted to magnets, but iron and steel are.





# Pirate Themed Maze

Can you help the pirate find his magic treasure chest?