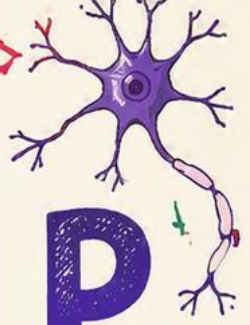




YEAR 7 SCIENCE ELP



EXPLORE. CREATE. CHALLENGE YOURSELF!

Choose one of the two exciting tasks below to show your **curiosity**, **creativity** and love of science!

1

RESEARCH THREE DIFFERENT SPECIALISED CELLS



in any animal of your choosing. Create a report or poster on these cells including:

-  **A DIAGRAM** of their structure
-  **THEIR FUNCTION** and what they do
-  **THE ADAPTATIONS** that help them carry out their role



CHALLENGE YOURSELF to find the most **strange** and **unique** specialised cells you can!



2

PRODUCE A MODEL OF A CELL

in any medium of your choice.



CHALLENGE YOURSELF to be **creative** and use a medium you have not tried before!



CLAY



FOAM & PAINT

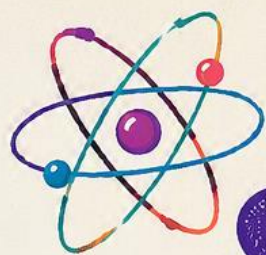


RECYCLED MATERIALS



PLEASE SUBMIT YOUR ELPs TO YOUR SCIENCE TEACHER BY THE **LAST DAY** OF THIS HALF TERM





YEAR 7



SCIENCE ELP



EXPLORE. CREATE. CHALLENGE YOURSELF!

Choose one of the two exciting tasks below to show your **curiosity**, **creativity** and **love of science**!



1

RESEARCH THE ROLE OF THREE SCIENTISTS IN THE DISCOVERY OF THE ATOMIC STRUCTURE



Write a report or create a poster including:



A SUMMARY OF THEIR FINDINGS

What did they discover?



WHEN THEIR DISCOVERY WAS MADE

Include key dates.



A DESCRIPTION OF THE EXPERIMENTS USED

How did they test their ideas?

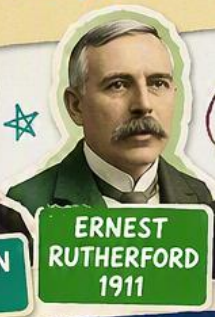


CHALLENGE YOURSELF

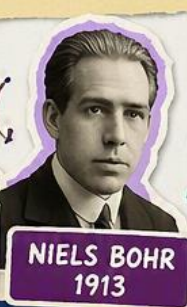
to dig deeper and present your information in the most **creative** and **engaging** way you can!



J.J. THOMSON
1897



ERNEST
RUTHERFORD
1911



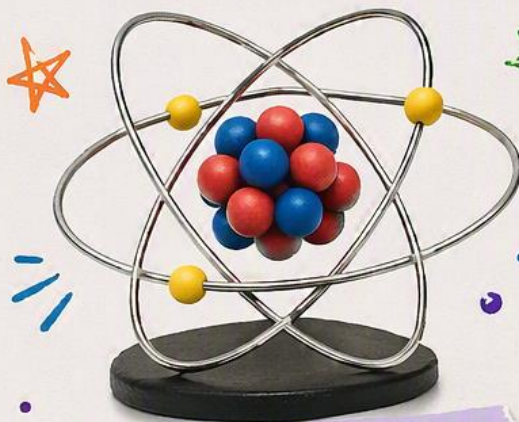
NIELS BOHR
1913

2

BUILD A MODEL OF AN ATOM OR ELEMENT



in any medium of your choice.



CHALLENGE YOURSELF
to be creative and use a medium you have not tried before!

IDEAS TO INSPIRE YOU...



CLAY



RECYCLED
MATERIALS



FOAM &
PAINT



WIRE &
BEADS



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YEAR 7 SCIENCE ELP

EXPLORE. CREATE. CHALLENGE YOURSELF!

Choose one of the two exciting tasks below to show your **curiosity**, **creativity** and **love of science**!

1 RESEARCH THE PROPOSED SOLAR FARM IN WREXHAM (GLÖYN BYW SOLAR FARM)

Create a poster including:



AN OUTLINE OF THE PROJECT

What is Glöyn Byw Solar Farm? Where is it? What will it involve?



HOW IT WILL POSITIVELY IMPACT THE ENVIRONMENT

Think about reducing carbon emissions, clean energy, protecting natural resources and more!



THE IMPORTANCE OF RENEWABLE ENERGY AND WILDLIFE CONSERVATION

Why are these important for our future and for protecting the planet?



CHALLENGE YOURSELF

Be as informative and creative as you can! Use facts, images, diagrams and your own great ideas!



2 CARRY OUT FURTHER EXPERIMENTS AT HOME

with a balloon or rods to investigate static electricity.



Take pictures or draw diagrams of your experiments and include these in a report to summarise your observations and findings.

IDEAS TO TRY:



Attract small pieces of paper or foil



Make your hair stand up



Use a rod to attract bits of polystyrene



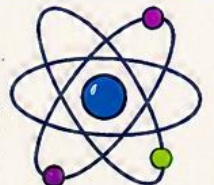
CHALLENGE YOURSELF

Test different materials, change variables and see what happens! What can you find out?



DISCLAIMER: Please seek parental permission before carrying out any at home experiments.

PLEASE SUBMIT YOUR ELPS TO YOUR
SCIENCE TEACHER BY THE **LAST DAY**
OF THIS HALF TERM





YEAR 7



SCIENCE ELP



EXPLORE. CREATE. CHALLENGE YOURSELF!



Choose one of the two exciting tasks below to show your **curiosity**, **creativity** and **love of science**!



1

DESIGN A NEW SPECIES TO SURVIVE IN AN ENVIRONMENT OF YOUR CHOICE.

This could be a completely new species or changing a species that already exists so it can live somewhere new.

Create a poster of your design, including an explanation of the adaptations you have given your species.

EXAMPLE

THE DUNEGLIDER

Lives in a hot, windy desert!



BIG EARS

Release heat and help it hear prey underground.



WATER-STORING TAIL

Stores water for long periods without rain.



SAND-COLOURED FUR

Helps it blend in and reflects sunlight.



WIDE PAWS

Spread its weight so it doesn't sink in the sand.



CHALLENGE YOURSELF

Think about your environment: What are the challenges? How will your species survive, find food and reproduce? Be creative!

2

COLLECT DATA ON VARIATION IN YOUR FAMILY AND FRIENDS.

Write a report of your findings including what characteristics you investigated, the most common characteristics you found and any rare characteristics have you observed.

IDEAS FOR CHARACTERISTICS TO INVESTIGATE:



EYE COLOUR



HANDEDNESS



HAIR TYPE



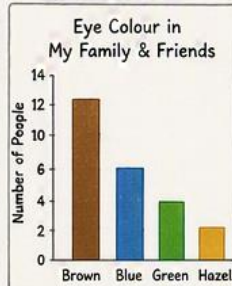
EARLOBE TYPE

PRESENT YOUR FINDINGS!

TABLE

Eye Colour	Number
Brown	12
Blue	6
Green	3
Hazel	2

BAR CHART



PICTURES



CHALLENGE YOURSELF

Can you explain why some characteristics are more common than others? What did you find most interesting?



REMEMBER: Always ask for permission before asking people for data or taking photos.



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YEAR 7

SCIENCE ELP



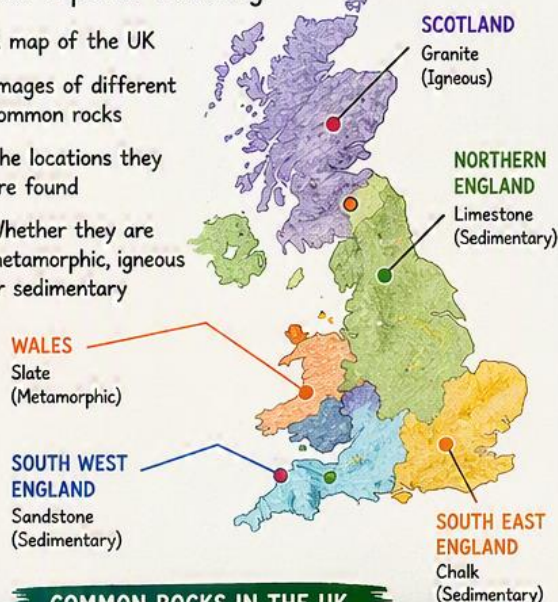
EXPLORE. CREATE. CHALLENGE YOURSELF!

Choose one of the two exciting tasks below to show your **curiosity**, **creativity** and **love of science**!

1 RESEARCH WHAT COMMON TYPES OF ROCK ARE FOUND IN THE UK.

Create a poster including:

- ✓ A map of the UK
- ✓ Images of different common rocks
- ✓ The locations they are found
- ✓ Whether they are metamorphic, igneous or sedimentary



COMMON ROCKS IN THE UK

IGNEOUS



Granite



Basalt

SEDIMENTARY



Limestone



Sandstone



Chalk

METAMORPHIC



Slate



Marble



Gneiss



CHALLENGE YOURSELF

Can you find out how these rocks were formed and how they are used in our everyday lives?



2 CREATE pH INDICATORS AT HOME AND TEST VARIOUS DIFFERENT HOUSEHOLD ITEMS

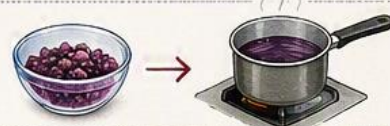
to see if they are acidic, alkaline or neutral. Create a report with pictures of your observations. You can make as many types of indicator as you choose.

METHOD:

- 1 Choose one food to make your indicator (turmeric, red cabbage, blueberries, beetroot or red onion).



- 2 Crush your chosen food with some water and gently heat.



- 3 Strain the liquid and leave to cool.



- 4 Add a few drops of your indicator solution to different substances around your house and record what colour changes you observe.



EXAMPLE RESULTS (USING RED CABBAGE INDICATOR)

SUBSTANCE	ACIDIC	NEUTRAL	ALKALINE
Lemon juice	—	—	—
Tap water	—	—	—
Baking soda solution	—	—	—
Milk	—	—	—
Soap solution	—	—	—



CHALLENGE YOURSELF

Try more than one indicator and compare your results! Which works best?



DISCLAIMER: Please seek parental permission before carrying out at home experiments.



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YEAR 7 SCIENCE ELP

EXPLORE. CREATE. CHALLENGE YOURSELF!

Choose one of the two exciting tasks below to show your **curiosity**, **creativity** and **love of science**!

1 RESEARCH BLACK HOLES.

Create a poster including:

WHAT ARE BLACK HOLES?

Regions in space where gravity is so strong that nothing, not even light, can escape.



HOW ARE THEY CREATED?

Black holes are formed when massive stars run out of fuel and collapse in on themselves in a supernova explosion.



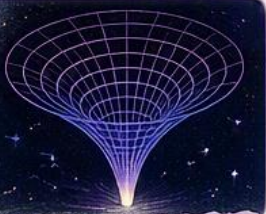
EVENT HORIZON - DEFINITION

The event horizon is the boundary around a black hole. Once something crosses this point, it cannot escape.



WHAT DO SCIENTISTS BELIEVE IS INSIDE A BLACK HOLE?

We don't know for sure! Scientists believe there may be a singularity - a point of infinite density where our current laws of physics break down.

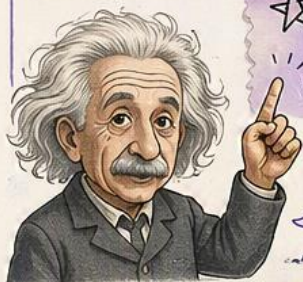


CHALLENGE YOURSELF

Can you find out amazing facts and the latest discoveries? Use diagrams, images and mind maps to make your poster stand out!

Did you know?

We can only detect black holes because of the way they affect things around them!



2 RECORD A MOON JOURNAL WITH YOUR OBSERVATIONS OF THE MOON OVER A PERIOD OF TIME.

This could be a week, two weeks or a 28 day cycle.



Record how the moon appears each day.

Day 1	Day 2	Day 3	Day 4	Day 5
...	...	...	...	...
Day 24	Day 25	Day 26	Day 27	Day 28

This could be a diagram or a picture of what you see!



TIPS FOR YOUR MOON JOURNAL

- ✓ Observe at the same time each day if you can.
- ✓ Note the date, time, weather and your location.
- ✓ Be as detailed as possible in your drawings or photos.
- ✓ You could also write down any interesting thoughts or questions you have!



CHALLENGE YOURSELF

Can you explain why the moon changes shape? What patterns do you notice?



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