

Teacher Resource

Periodic Table

Focus Questions

1. What did the BTN *Periodic Table* story explain?
2. How old is the periodic table?
3. Describe what the periodic table looks like.
4. Name one of the elements in the periodic table.
5. Brass is made up of which two elements?
6. How many elements are there in the periodic table?
7. What is the symbol for copper?
 - a. Co
 - b. Cu
 - c. Cp
8. Who invented the periodic table?
9. Why were their gaps left in the periodic table when it was first invented?
10. What questions do you have about the periodic table?

Activity

Class discussion

Before watching the BTN *Periodic Table* story, show your class a picture of the periodic table. Ask students if they know what it is and what they know about it.

KWLH

Discuss the BTN *Periodic Table* story as a class. Record what students know about the periodic table on a mind map. What questions do they have about what they have learnt in the BTN story? The following KWLH organiser provides students with a framework to explore their knowledge on this topic and consider what they would like to know and learn.

<i>What do I know?</i>	<i>What do I want to know?</i>	<i>What have I learnt?</i>	<i>How will I find out?</i>

Key Learning

Students will explore elements in the periodic table and present the information they find in an interesting way. Students will explore the way solids, liquids and gases change under different situations.

Curriculum

Science – Years 5 & 6

Scientific knowledge is used to solve problems and inform personal and community decisions.

Science – Year 7

Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available.

Science – Years 5, 6 & 7

Solids, liquids and gases have different observable properties and behave in different ways.

Changes to materials can be reversible or irreversible.

Mixtures, including solutions, contain a combination of pure substances that can be separated using a range of techniques.

Science – Year 8

Differences between elements, compounds and mixtures can be described at a particle level

Activity

Glossary of key terms

Students will create a classroom glossary about the periodic table. Students will start by brainstorming words as a class using a mind map to record their responses. Add to your class list of words by downloading the *BTN Periodic Table* story transcript and highlighting all the words that relate to the periodic table.

<i>Molecule</i>	<i>Atomic number</i>	<i>Chemistry</i>	<i>Periodic Table</i>
<i>Element</i>	<i>Symbol</i>	<i>Properties</i>	<i>Compound</i>

Students will find definitions for each term and consider using pictures and diagrams to illustrate meanings. Students will demonstrate their understanding by writing their own sentences using terms and concepts from the glossary.

Activity

Element profile

Students will choose an element from the periodic table to research in detail and create a profile. Once students have chosen an element from the periodic table to research they will find information under the following headings:

- Name
- Atomic symbol
- Atomic number
- How is it used and where does it occur?
- Description – what are some of the characteristics of this element?
- What makes this element useful?

Students will then think of creative ways to present the information they have found and present to the class. For example, students may:

- Create a poster including a unique artwork for the element (students will combine their finished posters to make up the periodic table. Display the posters in the classroom to celebrate the 150th anniversary of the periodic table).
- Write a news report as if you were covering the discovery of a new element. Give the element a name, symbol, number and description.
- Design and illustrate a comic strip explaining the element and what it is used for.
- Create a short animation about the element. Look at this animation on ABC Education about [Zirconium](#). Refer to this [BTN resource](#) for steps on creating a stop motion animation.
- Create your own mini science lesson about what you have learnt to teach to students in another class.

Below is a range of interactive periodic tables for your students to refer to during their research.

- <https://elements.wlonk.com/ElementsTable.htm>
- <http://www.periodictable.com/index.html>
- <http://www.rsc.org/periodic-table>

Activity

Scientific Experiment

Provide students with the opportunity to think and behave like scientists. In pairs or small groups, students will conduct a classroom experiment. Before starting this activity, explain to students what a science investigation is and why we do them. Think of words that relate to “science investigation” and then find and explain their meanings. Here are some concepts to get you started: variable, observation, diagram, fair test and prediction.

Students will choose one of the following ABC Education experiments to conduct in small groups:

- [Egg experiment](#)
- [Elephant toothpaste experiment](#)
- [Hot air experiment](#)
- [Rainbow milk experiment](#)

Students will use the investigation framework (at the end of this activity) before, during and after their investigation.

- What am I going to investigate?
- What do I think will happen (prediction)?
- Why do I think this will happen?
- What steps do I need to follow to investigate my prediction?
- What materials and equipment will I need? Make a list and draw and label each item.
- Write a sentence that summarises what happened.

Scientific Experiment
Use the guide below to help you plan and conduct your scientific experiment.

Student name:

Research
Describe what you are going to research using your own words.

Experiment
What am I going to investigate?
What do I think will happen (prediction)?
What steps do I need to follow to investigate my prediction?
What materials and equipment will I need? Make a list and draw and label each item.
Write a paragraph that summarises what happened. Draw a labeled diagram of your observations to show what happened.

Reflection
What problems did I experience when I was doing the investigation? How could I fix these problems?

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Activity

Quiz

How much do your students know about the periodic table? Do Newsround’s interactive quiz as a class.

<https://www.bbc.co.uk/news/round/46963919>

The Periodic Table Song

Watch this YouTube video as a class. It’s a fun way to learn the elements in the periodic table.

<https://www.youtube.com/watch?v=VgVQKcCfwnU>

Useful Websites

BTN – Science Kids

<http://www.abc.net.au/btn/classroom/science-kids/10531226>

ABC The Science Show – Happy 150th birthday to the Periodic Table

<https://www.abc.net.au/radionational/programs/scienceshow/happy-150th-birthday-to-the-periodic-table/10883874>

BBC Newsround – What is the periodic table?

<https://www.bbc.co.uk/newsround/46963919>

BBC Newsround – Cool facts about the periodic table

<https://www.bbc.co.uk/newsround/47035202>

TED-Ed - The genius of Mendeleev's periodic table

<https://www.youtube.com/watch?v=fPnwBITSmgU>



Scientific Experiment

Use the guide below to help you plan and conduct your scientific experiment.

Student name:

Research

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Experiment

What am I going to investigate?

What do I think will happen (prediction)?

What steps do I need to follow to investigate my prediction?

What materials and equipment will I need? Make a list and draw and label each item.

Write a paragraph that summarises what happened. Draw a labelled diagram of your observations to show what happened.

Reflection

What problems did I experience when I was doing the investigation? How could I fix these problems?