📘 **FOR PARENTS/CARERS**

⚙️ Inventions: Design, Test and Improve

A single lesson, cross-curriculum Curiosity Pack for Year 6

📌 At a Glance

Topic: Inventions

Age Level: Year 6

Session Length: 45–60 minutes

Wonder Seekers will:

- investigate how inventions are tested and improved
- explore how inventors solve problems
- compare different design ideas
- identify ways to improve a design
- use design thinking and creativity
- create and refine their own invention concept

🌍 Lesson Overview

This Curiosity Pack introduces Wonder Seekers to the process inventors use when creating new inventions.

Many people think inventions appear suddenly, but most inventions go through many stages of testing, changing, and improving before they work well.

Learners investigate how inventors test ideas, compare results, identify problems, and make improvements. They explore how small changes can affect how well an invention works and discover that mistakes and redesigns are an important part of innovation.

The lesson combines science, design, technology, creativity, and problem-solving through observation, investigation, and invention design.

This learning experience supports:

- observation and inquiry
- design thinking
- scientific investigation
- problem-solving
- creativity and innovation
- communication of ideas

The lesson is designed using inclusive learning principles, supporting diverse learning needs through:

- self-paced learning

- visual supports
- flexible activity choices
- hands-on exploration
- multiple ways to show learning

⏱️ Session Length

Total learning time: 45–60 minutes

Wonder Seekers may:

✓ complete the lesson in one session

✓ pause and return later

✓ spend longer on favourite activities

✓ simplify or extend the task

🎯 Learning Focus

This Curiosity Pack explores:

- inventions
- testing and improvement
- design thinking
- problem-solving
- innovation
- invention design

Learners will:

✓ investigate why inventors test ideas

✓ identify how inventions can be improved

✓ compare different design ideas

✓ explain how testing helps solve problems

✓ organise ideas visually

✓ create and improve an invention design

⭐ Success Looks Like

Success may look different for each Wonder Seeker.

Examples may include:

✓ explaining why inventors test inventions

✓ identifying ways an invention could be improved

✓ recording observations about a design

✓ creating a labelled invention diagram

✓ designing an invention that solves a problem

✓ describing how a design could be tested

✓ sharing discoveries in a way that works for them

Exploring, noticing, testing, and creating are all part of success.

🧰 Materials

You may want:

- paper or workbook
- pencils and coloured pencils
- ruler
- cardboard or craft paper
- recycled materials
- scissors
- glue or tape

Optional:

- LEGO or building materials
- modelling clay or playdough
- tablet or computer
- digital drawing tools
- invention books or websites

🔗 Suggested Learning Resources

🔧 How Stuff Works – Inventions & Technology

https://www.howstuffworks.com

Articles and videos explaining how inventions, machines, and technologies work.

AU CSIRO Education – Science & Inventions

https://www.csiro.au/en/education

Australian science and technology resources exploring innovation and invention.

⚙️ Tinkercad – Design & Build

https://www.tinkercad.com

A digital tool for designing and modelling inventions.

🎥 SciShow Kids – How Things Work

https://www.youtube.com/@SciShowKids

Short videos exploring inventions, engineering, and problem-solving.

🌍 Britannica Kids – Inventions

https://kids.britannica.com

🔒 Online Safety Reminder

When exploring online, remember:

👩‍🏫 Ask an adult first

🌐 Use trusted learning websites

🔐 Keep personal information private

⚠️ Tell an adult if something feels wrong

Stay curious and stay safe.

Facts, pictures, and explanations about inventions and inventors.

🧠 Universal Design for Learning Supports

This Curiosity Pack supports different ways of learning by providing flexible choices for engagement, learning, and expression.

Multiple ways to engage

Learners can:

- choose an invention to investigate
- explore examples through pictures, videos, or discussion
- work independently or with support
- move between drawing, building, designing, and talking
- take movement or sensory breaks

Multiple ways to learn

Learners can:

- read information about inventions
- watch short videos
- explore diagrams and models
- investigate how everyday objects work
- compare designs and identify differences
- discuss ideas with others

Multiple ways to show learning

Learners can:

- draw and label ideas
- write notes
- create diagrams
- build a model
- explain discoveries verbally
- create a digital design
- complete an invention design page

📘 FOR LEARNERS

⚙️ Inventions: Design, Test and Improve

🧭 Wonder Guide

Welcome Wonder Seeker!

Have you ever wondered how inventors create something new?

Many inventions do not work perfectly the first time.

Inventors often:

💡 have an idea

🖍️ create a plan

🧪 test their idea

🔧 make changes

🔁 test again

⭐ improve the design

Sometimes an invention changes a little.

Sometimes it changes a lot.

Testing helps inventors discover:

- what works well
- what does not work well
- what needs improving
- how a design could work better

Looking closely at inventions can help Wonder Seekers understand how people solve problems through creativity, testing, and persistence.

During this Wonder Journey, Wonder Seekers may:

⚙️ investigate how inventions improve

🧪 explore testing and redesign

🧠 solve design problems

🔍 compare different ideas

🎨 create an invention design

Ideas may be shown in many ways:

🖍️ drawing

📝 writing

🧱 building

💻 creating digitally

🗣️ explaining ideas aloud

There is no single way to complete the journey.

Trying ideas, changing plans, and improving designs are all part of being an inventor.

Activities may be completed in order or Wonder Seekers may begin with the part that feels most interesting. Taking breaks, testing ideas, noticing changes, and making discoveries are all part of the Wonder Journey.

🔎 Wonder Investigation

Wonder Seekers sometimes notice that inventions change over time.

Inventors rarely create the final version straight away.

Instead, they test ideas and learn from the results.

Testing helps inventors answer questions such as:

- Does it work?
- Is it safe?
- Is it easy to use?
- Can it work better?
- Does it solve the problem?

When inventors test ideas, they often discover new problems.

Finding problems is useful because it helps inventors make improvements.

👀 Investigate an Invention

Some Wonder Seekers investigate by:

- looking closely at an everyday object or invention
- examining how different parts work together
- comparing older and newer versions of an invention
- noticing features that make something easier or safer to use
- thinking about how an invention could be improved
- discussing ideas with someone else

Different inventions may be explored, such as:

📱 a mobile phone

🚲 a bicycle

🎒 a school bag

💡 a light bulb

⌚ a watch

🖥️ a computer

🎧 headphones

🪥 an electric toothbrush

🔍 Wonder Seekers may investigate:

- What problem does this invention solve?
- How does it work?
- What parts help it work?
- What works well?
- What could be improved?
- Has the invention changed over time?
- How might an inventor test this invention?

🖍️ Record Your Discoveries

When Wonder Seekers investigate, they sometimes keep track of what they discover.

Ideas may be recorded by:

- drawing and labelling the invention
- writing observations
- creating a comparison chart
- listing strengths and weaknesses
- sketching improvements
- creating a diagram showing how parts work together

⭐ Some Wonder Seekers notice:

- inventions often change many times before they work well
- testing helps inventors find problems
- improvements can make inventions safer or easier to use
- different designs may solve the same problem in different ways
- inventors learn from mistakes and redesign their ideas

🔍 Think Like an Inventor

You may also wonder:

- Why do inventors test ideas?

- What happens if an invention is never tested?
- Which part is most important?
- What improvement would you make first?
- How could the invention work better?
- Would different people need different designs?

Looking closely at inventions can help Wonder Seekers understand how testing, observation, and problem-solving help inventors develop better ideas.

🎨 Wonder Studio

Wonder Seekers sometimes bring their discoveries together by designing, testing, and improving ideas.

Inventors often use drawings, plans, models, diagrams, and prototypes to communicate ideas.

These tools can help explain how something works, how it might solve a problem, and how it could be improved.

In this activity, an improved invention design may be developed.

💡 A Problem to Solve

Many inventions begin with a problem, need, or challenge.

Some problems affect everyday life.

Some affect communities or environments.

Examples may include:

🎒 carrying heavy items

💧 saving water

📚 organising materials

🐶 helping pets

🌱 caring for the environment

🚲 making travel easier

Different Wonder Seekers may notice different problems that could be solved.

⚙️ Developing an Invention Idea

Ideas may be explored through:

🖍️ a drawing

🧱 a model

📋 a design plan

💻 a digital design

Some invention designs may show:

- what the invention does
- who it helps
- important parts

- labels and diagrams

🔧 **Improving the Design**

Inventors often test ideas and look for ways to improve them.

As designs develop, different possibilities may be considered.

Some Wonder Seekers explore questions such as:

- What could work better?
- What could make the invention safer?
- What could make it easier to use?
- What materials might work best?
- What challenges could appear during use?

Ideas may change as new possibilities are explored.

🧪 **Explaining the Design**

Inventors often communicate how their ideas work.

Designs may include:

⭐ invention name

🎯 problem being solved

⚙️ important parts

🔧 improvements made

🧪 possible ways the invention could be tested

🌍 people, places, or environments it may help

There is no single correct invention.

Different Wonder Seekers may develop different solutions to the same problem.

Imagining, testing, improving, and creating are all part of the invention process.

💭 Reflection

How did this Curiosity Pack feel?

😀 Loved it

🙂 Interesting

😐 Okay

😟 Challenging

Wonder Seekers may think about:

- What did you discover about inventors?
- Why is testing important?
- What improvement are you most proud of?
- What was challenging?

- What invention would you like to explore next?

You may reflect by:

- talking
- drawing
- writing
- building
- recording a short explanation