

Dare to Invent



Teacher Guide: KS3 & 4

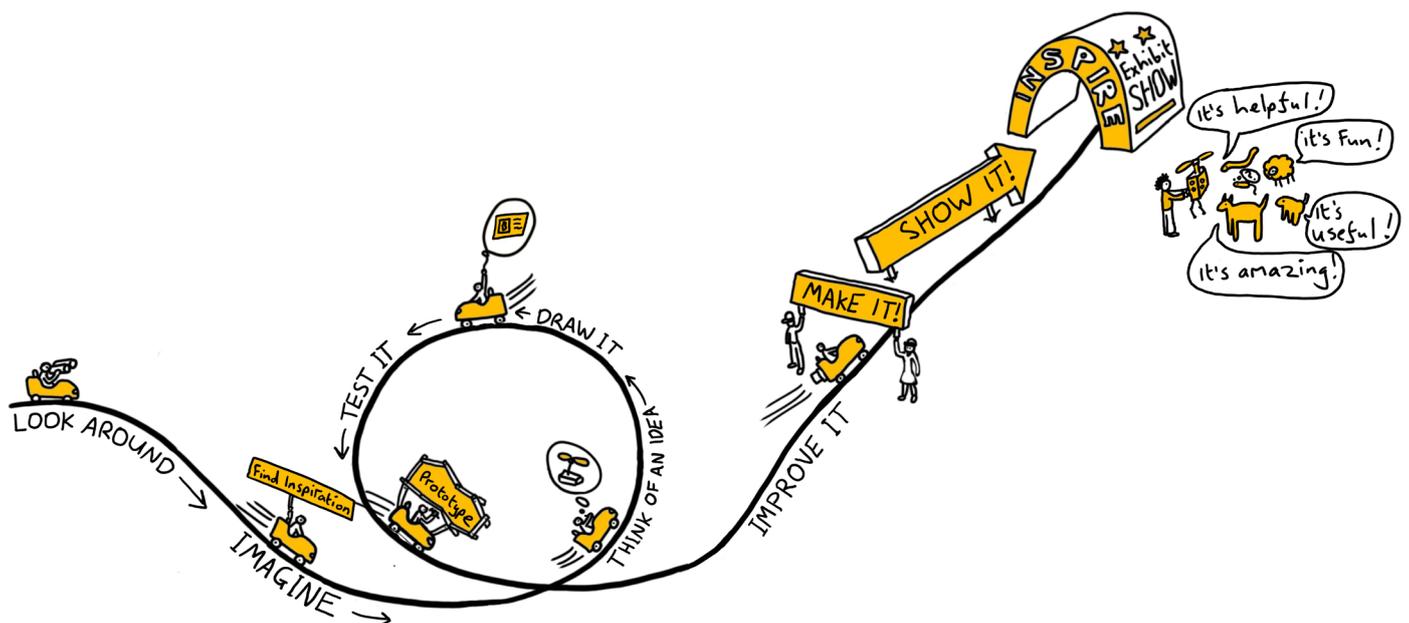
The aim of Little Inventors is to allow children to express the far reaches of their imagination. We want to inspire them to think up and draw original, ingenious, funny, fantastical, or perfectly practical invention ideas. There are no limits!

We're partnering with **Artsmark** to challenge children up and down the country to **Dare to Invent!**

Enjoy using these activities to support children to express themselves and come up with some great invention ideas in the process.

These activities are designed to be supportive and flexible to fit the young people you work with and the time you have available. Use as many or as few as you like!

All of the resources and worksheets you'll need to help you and your pupils Dare to Invent are accessible through the website artsmark.littleinventors.org.



KS3 and KS4 activities

Introductions

Students are going to use a mini zine to guide their invention activities. A zine (rhymes with teen) is a homemade magazine - our zine will work as a mini handbook for your pupils, inside, your students will find prompts, challenges and opportunities to develop ideas!



- Bring up the KS3+ introduction slides. This presentation will take your students through the Dare to Invent challenge and share some top tips for successful inventing.
- They are going to be using their creativity to improve an aspect of school life through invention.
- The inventions should be as whimsical and bonkers as possible.

Your inventor type quiz

To get the invention ball rolling, we want students to identify with an inventor mindset. You can bring up the **Inventor quiz** on the interactive whiteboard or choose to print out individual quizzes for your pupils.

Your invention type

- Ask the students to work their way through the questions. Students should note down the letters of the answers they give, this will help them work out their type.
- This quiz is just for fun! It should help to get students in the zone for some inventing.

Adapt:

- Work in pairs or discuss the different inventor types as a group.
- Explore different inventor types through drama – what do these inventors look and sound like? How do they move around, what do they wear and what equipment do they carry?

Extend:

- Ask students to look again at questions one and six. Can they develop a new design for a bike and an object that gives hugs? Students can use their quiz answers as a starting point but should be encouraged to put lots of fun into their design.

Problem detection tour!

- The first step on this invention journey is to go on a tour around the school to spot opportunities for invention.
- Explore different aspects of school life. What could be livened up with a little bit of invention?
- Students can record ideas as a list in their zine or with photos, doodles or sharing as a class.



Adapt:

- Explore one room only or take photos of different areas of school life to help prompt ideas.
- A volunteer from the group could record a 'day in the life' video with a friend or teacher to highlight some great problems that need new inventions.
- Enlarge the zine template to use in groups, or use large sheets of paper, audio or video to record ideas or recreate aspects of school life.

Extend:

Use roleplay in the classroom to work through the different types of experiences the students have around the school. Can the students discover aspects of school life that are ripe for improvement and invention?

Now it's time to take some of the **Problem detection tour** ideas and get creative!

Object detective

- Ask students to find the **Object detective** activity in their zine.
- Students can focus on one everyday object from their **Problem detection tour** to examine its properties and uses. How could the object be used in a totally different way? Can students roleplay being unfamiliar with this object, what assumptions might students make about its purpose?
- Create as many ideas for inventions as possible linked to the object!

Adapt:

Focus on one object and its properties as a group. Ask students, "If you could reinvent the object for a different purpose, what colours, textures, shapes or sounds might improve it?"

Extend:

Use the **Bonkers combo challenge** in the zine to mash totally different objects together to create a new bonkersly brilliant invention!

Now we're going to start thinking a little about who we might be designing for! How can we make our invention suit their needs?

Character profile

- It's always easier to invent when we have an idea of who we are inventing for.
- There is a mini **Character profile** in the zine, larger versions are available at artsmark.littleinventors.org.
- Based on what students have found out, ask them to come up with an invention idea that their character would need or like. They can write a list in their zines.

Adapt:

Instead of writing their description, students could draw, talk about and act out their character in order to discover key aspects of their behaviour.

Extend:

Use roleplay to explore invention ideas with a range of characters. This is an effective way of prototyping. How do the characters respond to some of the invention ideas? What changes could be made to really tailor an invention for a character?

Next up is a unique way to get ideas flowing if anyone is suffering from invention "creative block".



KS3 From doodle to invention

- As a warm up, use the doodle page in their zine or a larger sheet of paper.
- Create a doodle in the space - it doesn't need to resemble anything at this stage.
- Choose a doodle created by someone else in the group and try to make sense of it. Additional lines and detail can be added to turn the doodle into an invention idea.
- Come up with as many different doodle invention ideas as possible.
- Remind your students to consider the work they did on their **Character profiles** - is there something their character might need or enjoy?
- The most creative interpretation of a doodle wins!
- Give students some time to go through all of the ideas they have generated so far, which idea would they like to choose for their final invention?
- Use the final **Drawing sheet** to share their final invention idea.
- Encourage the students to dare to be as inventive as possible! Using colours and lots of labels can often help others to understand an invention.

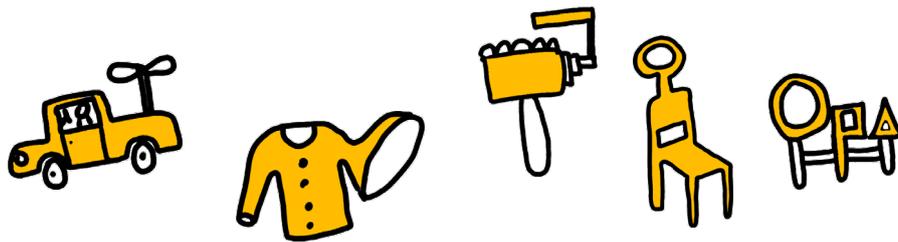


Adapt:

- Students can use any materials they like to create an idea in a free-flowing way. Slowly build and shape an object as a group and try to spot what kind of inventions emerge!
- Pool your class's range of skills and work on a final idea all together for a big display.
- Make a video or audio recording to share ideas in your pupils' own words or through performance! Students might play their 'inventor types' or the characters that need this invention.

Extend:

Students could create their own zine to share their invention ideas!



Round up & Showcase

- Discuss the different inventions as a group.
- What's their favourite – what do they like and why? How will they approach problems in the future?
- How will your students share their work?
- A mini exhibition at your school would be FANTASTIC! You can download templates and printables for an exhibition from littleinventors.org and invite the whole school community, parents and carers or even the local newspaper along!
- Perhaps you could exchange ideas with another school in your area, post your inventions on social media using **#DaytoCreate** or even invite your local newspaper along to see what you're up to!

