



Problem solving

Facilitated session

Age range: 7-11

 **BARCLAYS** | LifeSkills



Session overview

Time	Key learning outcomes	Resources
10-60 mins	By the end of the activity pupils will be able to: <ul style="list-style-type: none"> Define the skill of problem solving Understand how problem solving can help in a job and at school Discuss how they use this skill in their daily lives 	<ul style="list-style-type: none"> Problem solving slides

This lesson has been developed for pupils aged 7-11, to help them understand the importance of problem solving both throughout education and in the world of work. Through case studies, class discussions and an activity, pupils will start to understand how they practise their problem solving skills at home and at school.

To complete the activity within this lesson, you will need to provide your class with some basic equipment: paper, tape and marbles/small balls.

Activities in this lesson are mainly discussion based but there is an optional writing activity where students can create a mind map around what they have learnt. If this would benefit your group please let this be known at the time of booking so the facilitator can be prepped and mind map templates printed.

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Word bank

- Doctor:** Someone who treats people who are ill
- Geospatialist:** Someone who uses maps and mapping to help teams decide where to construct new buildings
- Industry:** A group which different types of organisations fall into, for example the education industry, music industry, art industry and sport industry
- Initiative:** Coming up with an idea and doing it by yourself
- Skills:** the things you're good at, for example being a good player in a football team means you are good at teamwork, being good at video games means you are good at problem solving
- Solution:** A way to solve a problem or deal with a difficult situation
- Sustainability:** Small changes we can make to look after the planet

Activity one

What is problem solving?

Word bank 1

Teacher	Group/individual	Industry	Initiative	Skills	Initiative	Sustainability
Explain what a word bank is and its purpose.	Explain what a word bank is and its purpose.	A group which offers support to other members of the group.	Coming up with an idea or solution to a problem.	The things you do at work or in your life that help you to solve a problem.	Any business or organisation that has a social or environmental purpose.	What changes or improvements can be made to make the planet more sustainable?

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Begin the lesson by introducing any volunteers you may have to support the session and ask them to describe a bit about themselves and their role.

Next spend some time going through the word bank on **slide 1**. To assess prior knowledge for each word ask pupils to use a thumbs up or thumbs down for 'new word' or 'not new word' making it clear that either way is fine.

Before sharing the word bank examples ask pupils if they can suggest any where relevant?

Now show your pupils this [short animation](#) (which can also be played from **slide 2**) that outlines the set of core transferable skills which the LifeSkills programme focuses on. Teamwork is also included in this animation as the eighth transferable skill. Instead of showcasing this skill in a separate lesson, we embed it throughout the other core transferable skills lessons.

What's special about these skills is that we use them in everyday life, at school in the world of work is they can be used in any industry and almost any job.

Young people can develop these skills at home, in school and in clubs they attend. As they are likely to carry out a number of different roles throughout their working lives, it's important they recognise how they can transfer these skills from one setting to another, especially as they move from education into work.

Show slide 3 and discuss the following definition of problem solving: being able to break down something tricky or challenging to find a solution. You might do this on your own or with other people.

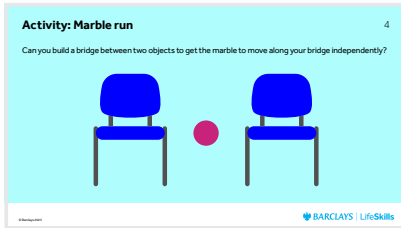
Ask your volunteer/s to share any examples of where they have shown problem solving whilst at work.

Ask pupils to think about why problem solving is important. Can they think of anyone they know who uses this skill. How they might show it already at home, school or at an after school club. If you are working with younger pupils or those who need more support, you could use the example that they have forgotten their pencil case so ask to borrow some pens/pencils from a classmate or teacher. Another example is that your classmate is talking loudly on the seat next to you so you can't hear what the teacher is saying, so you ask for them to be quiet or for the teacher to speak louder.

Take a 'hands-up' poll for pupils to self-assess whether they are great at/ at a medium level/ or could work on this skill. Emphasise that skills can be practised and developed, even if we are naturally better at some than others.

Activity two

Marble run



Split pupils into small groups and give each group some paper, tape and a marble (a small ball could be used instead). Ask groups to create a bridge that can transport the marble along a route between two tables or chairs that are one metre apart.

The bridge created must allow the marble (or ball) to run independently along it and once pupils let the marble go, they cannot touch it again during its run. Show **slide 4** and ask pupils to reflect on these questions:

Did everyone have the same idea to solve the problem?

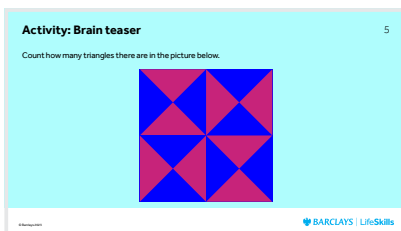
Did you consider different solutions before you started?

How can you come up with more than one possible solution?

How can you use pros and cons to decide on the best solution?

How did you work as a team to solve the problem?

Brain teaser



Split pupils into pairs of two and present them with **slide 5**. Ask them to work together to try and solve the teaser on the screen.

Ask the pupils to reflect on the following questions:

Did your partner have the same approach to solving the teaser?

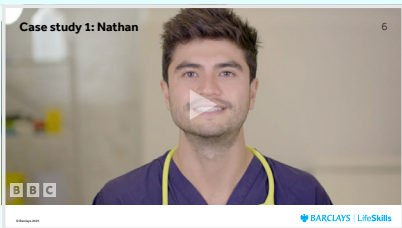
Was there more than one solution to the teaser?

Do you think more practise would make solving the teaser easier?

Activity three: Case studies

In this section you will find a film and written case study that help demonstrate the skill of problem solving. You could use both case studies, or just one depending on what you think will work best for your class. Discussion prompts for each case study are differentiated so that you can pick the most appropriate ones for your pupils.

Case study 1: Nathan



Head over to the BBC Bitesize website to watch its film, as a class, about Nathan who is a doctor and founder of a sustainable healthcare initiative, by clicking [here](#) or by clicking the link on **slide 6**. First briefly discuss with your class what a doctor is and what they might do in a typical day at work, e.g see patients, create a treatment plan, issue sick notes. You may also want to discuss sustainability and how sustainable products can help to protect the environment.

Work through the below discussion prompts with your class.

Discussion prompts for younger pupils or those that need more support:

- Explain to pupils how Nathan has shown the skill of problem solving in his job, for example, he knew there was lots of waste from plastic cups so developed a reusable cup that they could use instead as a solution to reducing the plastic waste

How can you come up with lots of solutions to a problem?

How can you work out which solution is going to work best?

Why do you think problem solving is an important skill for this job? For example, being a doctor you will be faced with many illnesses that need treating

Discussion prompts for older pupils or those who need less support:

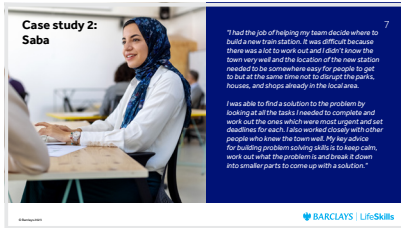
How does Nathan show the skill of problem solving in his job?

Why do you think problem solving is an important skill for this job? For example, being a doctor you will be faced with many illnesses that need treating

How can teamwork help when solving problems?

Activity three: Case studies

Case study 2: Saba



Saba is a geospatialist, explain to the group that this is someone who uses maps and mapping to help teams decide where to construct new buildings. These teams are made up of different people including builders and people who design buildings (architects).

"I had the job of helping my team decide where to build a new train station. It was difficult because there was a lot to work out and I didn't know the town very well and the location of the new station needed to be somewhere easy for people to get to but at the same time not to disrupt the parks, houses, and shops already in the local area."

I was able to find a solution to the problem by looking at all the tasks I needed to complete and work out the ones which were most urgent and set deadlines for each. I also worked closely with other people who knew the town well. My key advice for building problem solving skills is to keep calm, work out what the problem is and break it down into smaller parts to come up with a solution."

Display **slide 7** and work through the below discussion prompts with your class. You can either complete them as a class, get pupils to discuss in pairs or small groups, or ask pupils to write down their thoughts individually.

Discussion prompts for younger pupils or those that need more support:

- Explain to pupils how Saba has shown problem solving skills in her job, for example setting clear deadlines and prioritising urgent tasks
- Explain to pupils that knowing when to ask for help is an important part of problem solving

What would be the impact of building the station in a park?

How can problem solving skills help you prioritise tasks such as doing your homework?

Discussion prompts for older pupils or those who need less support:

How has Saba shown problem solving skills?

What other ways could Saba solve her problem? For example, if she didn't have time to do all of her work, she could speak to her manager to ask for support.

How can breaking down a problem into smaller parts help when trying to find a solution?

Can you think of any other jobs where you would need this skill?

Activity three: Case studies

Case study 2: Saba (cont'd)

To close the lesson carry out a plenary asking pupils to share key things that they have learnt from the session, is there anything they know now which they didn't know at the start of the session? If working with older students and you have time pupils could work in pairs in mock interviews answering the question of where they use the skill of problem solving in their daily lives.

Ask pupils to discuss in pairs or small groups some key things that they have learnt from the session, e.g. are there any new skills that they have learnt or things they now know which they didn't know at the start of the lesson. Alternatively, if a writing activity would benefit the group, pupils should spend some time completing the mind map template answering these questions.

To close the lesson ask pupils who are comfortable to share any key take aways.