THE PROBLEM STAGE
TEACHER'S NOTES

Learning Objectives:
- Understand an Earthshot from a global perspective
- Connect with the Earthshot from a local perspective
- Generate a problem statement for the ideation stage that students understand and care about.

In this stage you will introduce one of the 5 Earthshots, ask students what they know about that Earthshot and then come up with a local problem that they can solve with their ideas, together. There are 3 steps to follow.

Step 1. Choose your Earthshot
Ask your class to choose an Earthshot to focus on or choose one yourself that links to an area of students' interest. This will provide a big picture view of the whole Earthshot.

Start by playing the video for that Earthshot. You can find them at www.youtube.com/channel/UCBKGuPLVff4r4-moTh9L7iw. Click on "CC" to choose relevant subtitles.

Watch the video with sound off first. Ask students:
> *What do you think this film might be about? What is the overall challenge?*
> *What are the specific problems within it?*

Now watch it again and ask students to make a note every time they see a problem. They could tally them or write them on sticky notes. There are lots, so they won't be able to catch them all! List them all together afterwards and if you need help you can find a list of problems that are connected to the Earthshots below.

Ask students how they felt watching the video. Be clear with them that no one can solve these challenges on their own and introduce the idea that breaking the challenge down together will make it more actionable.

THE PROBLEM STAGE   Learning Objectives
Step 1

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Step 2. Break the problem down

Looking at the problems listed from the video, ask students to choose one of them that they feel they have a good understanding of or feel strongly about.

Explain to students that you are going to think about the effects of that problem and that when we do that it helps us break the problem down.

For example: if we think about the fact that nearly two-thirds of the world's population is breathing polluted air (source: iQair, 2020) it can feel overwhelming. But if we consider the impact of traffic in our local community, it feels manageable because we know where it is, who is affected and can imagine what it looks like.

> Start with global problems:
> - *What might the effects of this problem be on the world? How might people and communities around the world be affected? Can you remember any examples from the video? What do you think is causing this problem?*
>
> Then think about local problems in your community:
> - *Is our own community affected by this problem? Does it link to a global problem? Can we see this problem where we live? What does it look like? How does it affect our lives? How does it make us feel? Are there issues in our community that aren't in the video? Do they link to this problem?*

Write down all of these examples where everyone can see them - in a list, on a big mind map or on sticky notes. You've now broken down the Earthshot challenge into lots of smaller problems.

You can now move on to the next step, or if you have more time, you could discuss some of the other problems identified in Step 1. You could also research the specific problems, to find out more about the global and local effects of those problems. This will give you lots of useful information for **The Ideas Stage.**

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Step 3. The problem to solve
Now it's time to choose one problem to take to **The Ideas Stage**.

It should be something that students understand and feel passionate about, so they can come up with great ideas. You might want to pick one of the problems that affects your school or your community, because this will allow students to use personal experience to find solutions that no one else can. Or they could take a vote as a class and pick the most popular.

Then ask your students to help write out your **Problem Statement** by answering the questions on the Problem Statement worksheet. Ask them to focus on making it as clear as possible by using one-sentence answers. This can be completed together as a class or individually.

> **What** is the problem?
> **Where** is the problem occurring?
> **Who** is it affecting?
> **Why** is it important to solve this problem?

If everyone has completed a Problem Statement choose one or create one that clearly brings together the thoughts of all.

Display the Problem Statement for everyone to see. Next you are going to solve this problem in **The Ideas Stage.**

THE PROBLEM STAGE   Step 3
Problem Statement

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PROBLEM STATEMENT

WHAT

What is the problem?

....

....

WHERE

Where is the problem occurring?

....

....

WHO?

Who is it affecting?

....

....

WHY

Why is it important to solve this problem?

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PROBLEM STATEMENT   Worksheet

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PROBLEM STATEMENT

WHAT

What is the problem?

Traffic in our neighbourhood is creating lots of air pollution.

WHERE

Where is the problem occurring?

On the main roads around our school.

WHO?

Who is it affecting?

Everyone who is breathing the polluted air, including the school children, people who live nearby and animals.

WHY

Why is it important to solve this problem?

People are breathing polluted air, which could cause them to have health problems and shorter life expectancy. The pollution is releasing more carbon dioxide into the atmosphere, which is damaging our climate.

PROBLEM STATEMENT   Worksheet

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The 5 Earthshots | Problems and opportunities

A list of problems and opportunities identified in the 5 Earthshot videos. These can help guide your discussion with students.

Revive Our Oceans
- Pollution e.g. sewage, chemicals and plastic
- Warmer water
- Acidity increasing due to carbon emissions
- Overfishing and damage to sea life
- Coral bleaching
- Ecosystem breakdown
- Protecting habitats so life can replenish naturally
- Making it easy for people to eat responsibly
- Removing pollution

Protect and Restore Nature
- Forest fires
- Animals being poached
- Destruction of habitats
- Deforestation
- Destruction of lakes and rivers
- Sustainable food
- Allowing nature to regenerate
- Tree planting
- Protecting habitats so life can replenish naturally
- Urban farming

THE PROBLEM STAGE   The 5 Earthshots
                          Problems and opportunities   GENERATION EARTHSHOT   WORLD'S LARGEST LESSON   THE EARTHSHOT PRIZE   ROYAL FOUNDATION OF THE DUKE AND DUCHESS OF CAMBRIDGE

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Clean Our Air

- Industrial pollution
- Transport pollution (e.g. cars, aeroplanes and airports, ships and ports)
- Fossil fuels
- Burning household waste
- Burning wood, coal and diesel for fuel, power and heating
- Power and heating
- Toxic air spreads disease and respiratory illnesses and causes death
- Affordable, renewable energy
- Choosing green transport e.g. walking and cycling, public transport, electric vehicles instead of petrol, gasoline or diesel fuel options
- Locally sourced goods

Fix Our Climate

- Earth's ecosystem being unbalanced
- Tipping points
- Extreme weather
- Melting ice and rising sea levels
- Economic and human impact
- Cutting out carbon to reach net zero
- The power of youth and people working together
- Removing greenhouse gases
- Green jobs
- Tech and nature-based solutions

Build A Waste-Free World

- Products with little intrinsic value and excess
- Limited resources that will run out
- Single-use products and plastic
- Wasting water
- Pollution e.g. sewage, chemical and plastic
- Wasting water
- Food and organic waste
- Textile waste
- Circular economy
- Renewable materials
- Reusing, repurposing and then recycling

THE PROBLEM STAGE The 5 Earthshots
Problems and opportunities

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