Lesson Name	Stereotypical Science – Second Level
Suggested Duration	1 hour
Teacher Resources	**Lesson Introduction:** This lesson aims to use a series of activities and discussions to break down negative stereotypes surrounding STEM careers. This includes discussion about who scientists are/can be and the diversity in the sciences themselves.
Objectives	By the end of the lesson, pupils should have a better awareness and understanding of: • What a stereotype is • Negative stereotypes they may hold and the impact these can have. • Diversity in who can become a scientist • Unconscious biases and how to tackle them
Resources per group	
	Discussion:
	Discussion statements
	Profile Matching Activity:
	1x set of scientist pictures per group
	1x set of scientist biographies
	Agree/Disagree game:
	1 x set of headings (agree/disagree or Yes /No/Not sure)
	1 x pack of discussion questions. These could also be taken from discussions as part of previous activities/lessons
	Language Key
	Purple font denotes instructions and suggested questions Green font denotes explanations you can give to the pupils Black font denotes general information for your own knowledge

Lesson Section/ Duration		Description
Introduction 10 minutes		*To begin the lesson, open with a discussion about:* - *what a stereotype is* - *-the impact stereotypes can have and* - *what stereotypes pupils may have seen before.* *Q: What is a stereotype?* A stereotype is a way that we might think about a certain person or a certain group of people. It is an easy way for our brains to make decisions about people based on how they look, how old they are, whether they are a boy or a girl or their skin colour. Everyone does this and that's ok, as long we remember that stereotypes are not always true. Stereotypes can be negative and so it is important to think about how this could have an impact people. *Q. How could a stereotype have a negative effect for people?* Stereotypes could have an impact on how people are treated, for example, how they are treated at school or work, how they are treated by other people, what jobs they can get and many other ways. When stereotypes become a problem this can lead to what we call discrimination. Discrimination is when we treat someone unfairly based on nothing other than who they are. Today we are going to talk about stereotypes, scientists and how stereotypes can be found in science.
10 minutes		**Word Cloud** *Q, What is a scientist?* I would like you to speak to the person next to you and think of three words you would use to describe a scientist, and then we can collect these in and find out what everyone has said.

10 minutes 20 minutes		*Collect in the responses from pupils, it doesn't matter if they don't have three words or phrases. You could ask the pupils to count how many times a phrase has been said, and then create a wordcloud.* *You could use https://www.mentimeter.com/ to create this wordcloud and display it on a screen* *This could be extended by creating a graph of the words used and discussing percentage of class who say the same thing.* These are some really interesting ideas about how you would describe a scientist. Would anyone like to explain why they wrote down what they did? Emphasise there are no wrong answers, this is purely to ascertain what the pupils think. Scientists are very curious people who like to solve problems. They solve problems by doing experiments. **Hands Up Game** I'd like you all to put one hand in the air, close your eyes and picture a scientist. I am then going to get you put your hand down if the person you are thinking of matches the description I say. Put your hand down if your scientist is: A man Wearing a lab coat Working indoors *These are points to start discussion about what scientist look like and what they do. Also explore if they know anyone who does that job that might have influenced the picture that they made.* *You can repeat this game for several rounds, each time replacing scientist with a different occupation (such as engineer, nurse etc.). Ask pupils to put their hand down if the image they have in their head matches the stereotype.* *Q Do you know anyone who does that job* *Q Did you think it was a male/female job* *Q Does this mean only women can be nurses etc.*

10 minutes		**Profile Matching activity:** *This task includes 18 profiles and matching photographs of scientists. You do not need to use all of these, and could split all 18 between different groups, with 4 or 5 examples being given to each group.* Scientists come in all different shapes and sizes, and so we are going to have a look at some real life scientists and find out a little bit more about them. I've given each group some profiles (descriptions of these scientists) but we have left out an important detail, what they look like! What you need to do is read the profile and then discuss with your group/partner which pictures matches the scientists. **Guided Discussion:** *As a class read each biography in turn and ask the pupils which picture they chose to match it with and why.* *Pupils are encouraged to discuss if they are surprised or what they expected the person to be like. Class can compare their choices with other groups and encourage debate.* *See the accompanying answer sheet and glossary to explain the individuals and some of the more complex terms surrounding their work.* *This is designed to open wider debate about stereotypes and encourage debate that science is for everyone. Discussing stereotypes that come up (gender, race, disability).* ***Teacher Note:** Stereotypes are a natural response in the decision-making process, by attempting to simplify complex social information.* *Discussion should be around which stereotypes are harmful or limiting to the people they are applied to, and how the pupils can tackle those stereotypes in themselves and those around them.* *Any discussion points that arise can be used in the following activity to explore them more.*

		Discussion Continuum: **Set up:** *Place two headings of agree and disagree in the classroom. Creating an invisible or physical line on which pupils can stand* *The class will be shown or will read statements about gender, race, ability etc. and their relation to science or STEM. Pupils will be asked to place themselves somewhere along a long line in the classroom (as above) to show how much they agree or disagree with the statement.* *If this is not inclusive, pupils could instead give a thumbs up, thumbs down or hands on their head (for don't know).* For the last part of our discussion today, I am going to read a statement and what I want you to do is to tell me whether you agree or disagree with what I have said. If you agree, you should stand next to the "Agree" sign and if you disagree stand beside the "Disagree" sign. If you're not sure, you can stand somewhere in between. 1. *People who use wheelchairs can't be scientists.* 2. *Being a scientist is only for geeks* 3. *Only girls can become nurses, and boys become doctors* 4. *To be a scientist you have to be the smartest person in class* 5. *Science is for everyone* 6. *Men are just better at being scientists than women* 7. *All scientists work in labs and wear white coats* 8. *It's ok to make mistakes* *This list is not exhaustive and you can choose other statements related to STEM careers and science in general. You can discuss perceptions and encourage discussion/debate between groups.* *Discussion can then take place as to why they placed themselves where they did.*

		We now have a better idea of what stereotypes are, how they can have an impact not only in science but everywhere in life.

Further lessons	**Cross curricular learning:** **Health and wellbeing / PSE** - Teachers may wish to introduce specific scientists and their stories to the class to discuss different issues surrounding other stereotypes and perceptions (Gender, race, LGBTQ+, disabilities). **Science** – Introducing other types of science: Teachers could use the pictures that were sorted to introduce a new topic or branch of lessons about that field such as Zoology, Marine Biology, Physics. You could introduce a scientist of the week/month for the children to learn about. Who they are and what they did/do Each scientist used could be used to look into their field of study (forces, electricity, nature etc) Scientist of the week: Class choose a scientist to learn about. This could perhaps link to their overall topic or next science topic.
Common Misconceptions	**Pupils may think that:** • Scientists must wear lab coats • Scientists must work in labs • Science is always about chemicals or "potions" • Working outdoors isn't science • Only boys can be certain types of scientist (engineers)
Outcomes	• Pupils are aware that anyone can be a scientist • Pupils will be aware of their own assumptions and stereotypes through activities and discussion • Pupils can work together towards a common goal • Pupils can discuss their opinions in discussions