

Rubric for giving feedback on explanations

Use these rubrics to assess if the group presenting their explanations are convincing. Remember, Mr. Tusk wanted to test if you could find out what was in the mystery boxes, but also, he wanted to know how neutron scattering works.

If you are not convinced by each other, perhaps it will be difficult to convince Mr. Tusk. So, your future may depend on you giving quality feedback: Be honest, but be constructive and caring as well. Discuss how you can improve your explanations and produce a really good presentation for Mr. Tusk.

You use the rubric by selecting one of the three options: “Not very convincing”, “Convincing, but...” or “Very convincing”. Each option has an explanation, use that to choose. If you think the explanation lies between two of the options, then choose that.

When you choose, it is important that you explain why. It is also important to help your fellow scientists improve, so try to do that. There’s room for you to write after each rubric.

The rubrics are on separate pages after this one. There are three rubrics:

- The content of the mystery box
- How the instrument works
- How the neutrons are produced and get to the experiment

The content of the mystery box

	Not very convincing	Convincing, but...	Very convincing
Characterise the group's explanation for their guess of what is in the mystery box that they have investigated.	The group has a guess, but they do not convincingly use the data to substantiate the guess. They do not attempt to explain the underlying science and do not mention where there may be uncertainties.	The group has a reasoned guess, where they use the data from the experiment. They mention the underlying science, but do not convincingly relate their guess to the underlying science.	The group argues for their guess using the data from the experiment and explicitly ties it to the underlying science. They mention where they are uncertain and do not conclude more than the data allows for.

Give an example that shows why you have chosen "Not very convincing", "Convincing, but ..." or "Very convincing":

Can you find a specific thing that the group could improve upon? Something they should investigate more?

How the instrument works

	Not very convincing	Convincing, but...	Very convincing
Characterise the group's explanation for how the instrument they have used work	The group only describes how to use the experiment but does not explain the setup or the data. They do not mention the science behind the instrument.	The group describes the setup of the instrument and links this to how to use the instrument. They know about the science behind the instrument, but does not convincingly link that to the instrument's design.	The group describes the setup of the instrument including possible limitations in the way it has been used in this experiment. They convincingly link the design of the instrument to the underlying science.

Give an example that shows why you have chosen "Not very convincing", "Convincing, but ..." or "Very convincing":

Can you find a specific thing that the group could improve upon? Something they should investigate more?

How the neutrons are produced and get to the experiment

	Not very convincing	Convincing, but...	Very convincing
Characterise group's explanation of how neutrons are produced and get to the experiment.	The group only lists the steps needed to produce neutrons and get them to the experiment, but does not go into any detail on any of the steps.	The group lists the steps needed to produce neutrons and get them to the experiment. They also provide some explanation about the science behind some of the steps.	The group lists the steps needed to produce neutrons and get them to the experiment. They also provide convincing explanations about the science behind each step.

Give an example that shows why you have chosen “Not very convincing”, “Convincing, but ...” or “Very convincing”:

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Can you find a specific thing that the group could improve upon? Something they should investigate more?

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