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- AMAZING -
· / BRAIN \ ·

Session Guidance

Your Amazing Brain Experiment Idea

Session overview

Students will reflect on their journey of discovery into their amazing brains and take time to reflect on all the things they have learned to date. They will then work in teams to develop an experiment idea to be carried out by scientists at the Wellcome Centre for Integrative Neuroimaging, University of Oxford. The research team will use an MRI scanner to show students inside the brain and how their experiment question might be answered.

Learning outcomes

- Synthesise learning about the brain
- Connect understanding of the brain to daily life
- Devise an experiment against set criteria
- Apply knowledge of working scientifically

Session steps

1. **Introducing the competition (5 mins)**

   Students should be aware of the competition element of Your Amazing Brain. Use the slideshow to remind students that this is their opportunity to develop their ideas that could be used for the experiment that will be broadcast live to all schools taking part. Take this opportunity to put students into groups of four (a group or two of three or five students is fine depending on class size).

2. **Reflecting on the journey so far (15 mins)**

   Student teams will reflect on what they have learned from the Your Amazing Brain exhibit and the visit from a University of Oxford scientist. Depending on how recent these were, it may be useful to have a whole class discussion to refresh students' memory. In teams, students will then list: what most surprised them; what was really interesting; what they still want to know; and what linked to what they already know. A mini-plenary can be used to review this activity. A template student sheet is available, or students could do this activity on a large piece of sugar paper.

3. **What makes a great experiment? (5 mins)**

   This is an opportunity to review the working scientifically skills of questioning, predicting, and testing. Use the slideshow to generate a whole class discussion using modelled examples and ideas. Remind students that they will be judged on how they demonstrate these skills.

4. **What the judges are looking for (5 mins)**

   It is not just science skills that the judges will be looking for. Share the template for the experiment ideas and show how students can succeed using the information in the slideshow.

5. **Ideas for students' experiments (10 mins)**

   There are some broad areas that scientists are studying at the moment. Show examples of these using the slideshow to provide inspiration and structure for students.

6. **Designing your amazing brain experiment (45-75 mins)**

   The bulk of this session will be students designing their amazing brain experiment. The slideshow contains a number of check-in slides that can be used to scaffold this section. This is helpful if students may struggle to work independently for long periods of time.

7. **Final check-in (5 mins)**

   Time for a final check-in to make sure that all the details have been included. Some students may wish to continue work on their idea. Others may need some further feedback or guidance to maximise their chances of winning. Good luck to all!

Session resources

As well as any notes or photos that students or teachers may have taken of the exhibit or researcher visit, there are four additional resources provided for this session.

- Student Sheet Reflecting on my amazing brain (DOC / PDF)
- Student Sheet Our brain experiment idea (DOC / PDF)
- Student Sheet Our brain experiment idea example (DOC / PDF)
- Student Sheet Brain experiment report (DOC / PDF)
- Slideshow Your Amazing Brain experiment idea (PPT)

Differentiation

Primarily differentiation for developing experiment ideas is **by support**. All student teams are expected to develop a question that can form the basis for an experiment about the brain. Some student teams will need more support than others and mixed ability teams can contribute to this.

Teachers can also differentiate **by task**, with less able students focusing on the first three sections of Student Sheet: Our brain experiment idea. Students, who are less familiar or comfortable with working scientifically concepts, can also leave out these references. The optional work evaluating the experiment using Student Sheet: Brain experiment report can also be left out or simplified for less able students.

The open success criteria for the competition also allow for differentiation **by outcome**. All students should be reminded that the idea need not be complex to win the competition. Sometimes the simplest ideas are best.