Neuroscience: Asking our own questions

Asking questions

- Ask our own questions about neuroscience or neurobiology

- Designate one person to be the recorder
- Write down all the questions

- Record information from this activity on a new sheet of giant post-it

Step 1: Rules for asking questions

1. Ask as many question as you can
2. Do not stop to discuss, judge, or answer any question
3. Write down every question exactly as it is stated
4. Change any statement into a question

What do you think can be challenging about following these rules and why?

Step 2: Asking questions

Question focus:

Neuroscience or Neurobiology

Rules for asking questions:

1. Ask as many question as you can.
2. Do not stop to discuss, judge, or answer any question.
3. Write down every question exactly as it is stated.
4. Change any statement into a question.

Step 3a: Closed- vs. open-ended questions

- Closed-ended, e.g. Are we going to lunch as a program again tomorrow?
- Open-ended, e.g. What will we be doing for the summer?

1. Review your list of questions, and score them as closed-ended or open-ended

2. Choose two closed-ended questions and change them to open-ended questions
3. Choose two open-ended questions and change them to closed-ended questions

Discussion: What do you think are some advantages and disadvantages of each question type as research questions?

Step 3b: Types of research questions

Three types of research questions:

- Description: What is happening? What are we going to do in the summer?
- Cause: Is there an effect? Does participating in STARTneuro help me develop as a neuroscientist?
- Process or mechanism: Why or how is it happening? How does participating in STARTneuro help me develop as a neuroscientist?

Review your list of questions, and score them as (1) description, (2) cause, (3) process / mechanism, or (4) not sure / combination

Step 4: Prioritizing questions

Choose three questions that are the most interesting to your group

Side quest: What criteria are you using to decide on “most interesting”?

Buddy has a hypothesis

youtube.com/watch?v=r0CGhy6cNJE

Step 5: Converting questions into testable hypotheses

An idea you can test

Not an observation!

"Your legs are longer" is NOT a hypothesis

"I think you guys are faster because your legs are longer" IS a hypothesis

Hypothesis

Prediction of an outcome

Experiment to test predicted outcome

- Generate a testable hypothesis from each of your three questions
- If necessary, feel free to update your question(s)! (:

Step 6: Reflections

1. What did we learn?

2. Did we learn about neuroscience or neurobiology from asking questions?

3. What did you find useful or not useful about the question asking process?