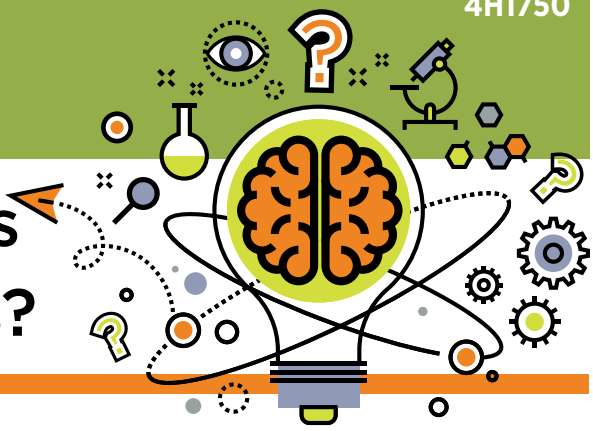
TEACHING SCIENCE
...when you don't know diddly-squat



Do moms really have eyes in the back of their heads?

Purpose:

The purpose is **not** to teach specific content, but to teach the process of science – asking questions and discovering answers. This activity encourages young people to try to figure things out for themselves rather than just read an answer on the internet or in a book. As a leader, try not to express your opinion, but let the youth engage in arguments based on evidence.

Time required:

20 minutes or multiple days depending on the interest and questions the youth have

Materials:

- ❑ One or more mothers with their own children
- ❑ Adults who are not mothers
- ❑ Nonrelated children
- ❑ Lots of cookies
- ❑ Pencil
- ❑ Paper

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Science Practice:
Asking questions and defining problems

1. Ask the youth: *Do moms know what their kids are doing without seeing them? It is something many children have suspected when their moms catch them doing something they shouldn't. Is there a way to test this? Are moms better than other adults at knowing which children are engaged in bad behavior? Are they better at catching their own children?*

Science Practice:
Planning and carrying out investigations

2. Tell the youth that they are not supposed to eat any cookies. Place the cookies on the table. Have the mother in a place where she cannot see the children or the cookies. (She could simply have her back turned.) Have both the related and nonrelated children try to sneak a cookie. If the mother calls out a specific child's name when he or she sneaks a cookie, the child has to put the cookie back. Track who gets cookies and who gets caught using the table below.

Science Practice:
Analyzing and interpreting data

3. Run the experiment several times with different adults. Create following chart on a piece of paper and fill it out:

Cookie Sneaking Experiment

Adult	Mom's children caught	Other children caught	Mom's children not caught	Other children not caught
Mom 1				
Non-mom	*N/A*		*N/A*	

Science Practice:
Using mathematics and computational thinking

4. *Can you calculate what percent of times moms caught their own kids?*

Science Practice:
Constructing explanations and designing solutions

5. *Were moms better at catching their own children? Were moms better than others at catching the cookie stealers?*

Science Practice:
Engaging in argument from evidence

6. *Would you say moms have an ability to know when their kids are misbehaving based on this experiment? Why or why not?*

You do not need all the answers to teach science. You simply need an inquisitive mind and to be willing to carry out an investigation.

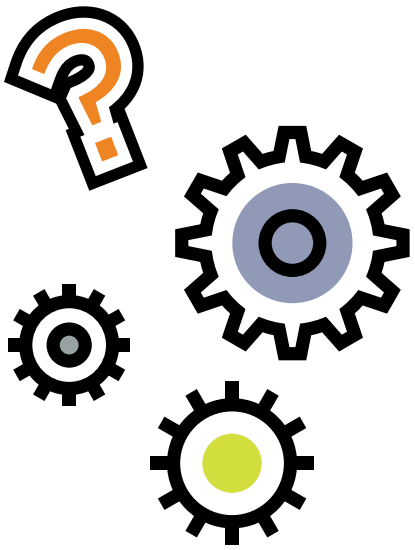
Other thoughts:

- *Could you run this test to see if kids are good at catching adults misbehaving?*
- *Are certain professions better at being sneaky than others (such as private investigators, police detectives or other professions)? Could you test this question?*
- *Can moms predict bad behavior in adult children?*
- *Do grandparents have the ability to predict this behavior?*

Science & Engineering Practices:

These eight Science and Engineering Practices come from *A Framework for K–12 Science Education* (National Research Council, 2012, p. 42). These research-based best practices for engaging youth in science are connected to in-school science standards that all children must meet.

- Asking questions and defining problems
- Developing and using models
- Planning and carrying out investigations
- Analyzing and interpreting data
- Using mathematics and computational thinking
- Constructing explanations and designing solutions
- Engaging in argument from evidence
- Obtaining, evaluating, and communicating information



Reference:

National Research Council. (2012). *A framework for K-12 science education: Practices, crosscutting concepts, and core ideas*. Washington, DC: National Academies Press.

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