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Science Curriculum and Methods
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Guided Discovery Lesson Plan

Lesson: Magnifying Finger Prints

Length: 20-25 minutes

Grade Intended: 1st grade

Academic Standards:

- Scientific Thinking 1.2.5: Demonstrate that magnifiers help people see things they could not see without them.

Learning Objectives:

- Using magnifying glasses in partners, the students will identify at least three differences between their fingerprints.

Assessment: Students will be assessed on participation based on their “My Exploration Page” and interactions with their partners.

Advanced Preparation by Teacher:

- “My Exploration Page” copies should be made for each individual student.
- Magnifying glasses should be gathered, one for each individual student
- If desired, students could be put into pairs before lesson. (Otherwise, students can pair up during the lesson on their own.)

Procedure:

Introduction (ENGAGE): “Today we are going to do some exploring with a scientific tool.” (Hold up magnifying glass.) “Does anyone know what this is called?” (Bloom’s: Knowledge) (Allow for student response.) “Where have you seen one of these before?” (Bloom’s: Knowledge) (Allow for student response.) “Today we are going to be looking at something that EVERYONE has and that is different for everyone. We are going to look at our fingerprints and compare them to a partner’s fingerprints to see how they are alike and how they are different. However, fingerprints are pretty small—how do you think that we can look at them so that we can see all the tiny details?” (Bloom’s: Application) (Allow for student response.) “Yes! We are going to look at our fingerprints with magnifying glasses! My challenge to you is to find three differences between your fingerprint and your partner’s fingerprint—using the magnifying glass to see the small differences too!”

Step-By-Step (EXPLORE):

1. Pass out a magnifying glass and “My Exploration Page” to each student.

2. Allow students to pair up (or assemble them in already determined pairs) and begin exploration with their magnifying glass. (Gardner: Interpersonal)
3. While students are exploring with magnifying glass, go around to each student and help them to make an ink fingerprint on their “My Exploration Page” and make an ink fingerprint on their partner’s page as well.
4. Once students have their fingerprints on their papers, have students explore the similarities and differences with their partners. (Gardner: Visual/Spatial)
5. Allow students approximately 10-15 minutes to explore and discuss with their partners. (Gardner: Interpersonal and Verbal/Linguistic)
6. If students are struggling, prompt ideas of differences with the following questions..
 - Are your prints the same size? (Bloom’s: Comprehension)
 - Are the patterns the same? (Bloom’s: Comprehension)
 - What about the thickness of the lines? (Bloom’s: Comprehension)

Conclusion (ENGAGE): “Great job, everyone! Let’s talk about what we discovered during our exploration. Who found differences between their fingerprint and their partner’s?” (Allow time for student response.) “Wow! You all found some great differences! I wonder... police use fingerprints to identify people... why would they do that?” (Bloom’s: Evaluation) (Allow for student response.) “Good thinking! Magnifying glasses help us to see things that we could not otherwise see, don’t they? What did you see that you wouldn’t have been able to without your magnifying glass?” (Bloom’s: Synthesis) (Allow time for student response.) Tomorrow we are going to look at other things with our magnifying glasses and see what else they can help us see that we wouldn’t be able to see without it.”

Adaptations/Enrichment:

Students with ADHD: Students with ADHD could be paired up with a student who would help keep them on task, or could even be partnered with a teacher/teacher’s aide. Their group should also be placed in an area of the room with the least distractions.

Students with Autism Spectrum Disorders: Students with ASD could be paired with an understanding student or one of their friends to help alleviate some of the social pressures they may feel in working with another student.

Students with Gifts and Talents in Creativity: These students could also be posed the additional challenge of drawing and recreating their own fingerprint on their worksheet.

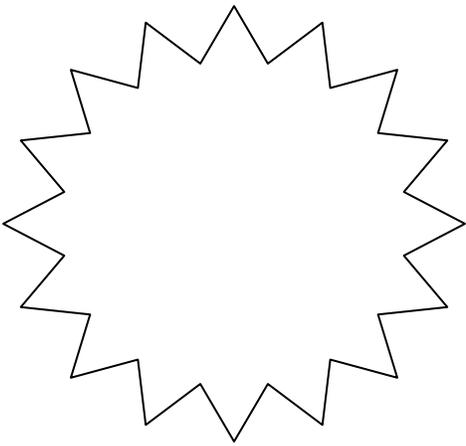
Self-Reflection:

- Did my students enjoy comparing fingerprints?
- Did I allow enough time for exploration?
- How did my students behave during partner exploration?
- Would it have worked better in small groups or individual, rather than partners?
- How could I extend this activity or deepen it for older children using the 5E method?
- How could I make this lesson more multidisciplinary and incorporate it into subject area content?

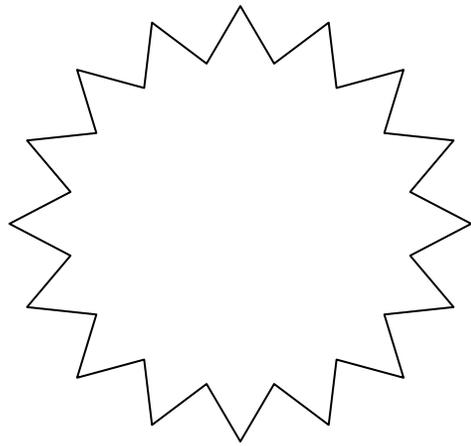
Name: _____

My Exploration Page

My Fingerprint:



My Partner's Fingerprint:



Differences:

1. _____

2. _____

3. _____