

LGBTQ-Inclusive Curriculum



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Science MS: Lesson 1 - Do You See Yourself as a Scientist?

Summary Overview Learning Plan Lesson Resources Standards

Grade level:

6-8

Approximate Lesson Duration:

1 block

Unit/Lesson New Jersey Student Learning Standards (NJSLS):

Science and Engineering Practices addressed:

1. Asking questions (for science)
2. Developing and using models
3. Analyzing and interpreting data
- 4.. Constructing explanations (for science)
5. Engaging in argument from evidence
6. Obtaining, evaluating, and communicating information

Cross Concepts addressed:

- 1.Patterns
- 2.Cause and effect
- 3.Systems and system models

Brief Summary of Cultural Competencies Related to the Unit/Lesson:

What makes this lesson culturally relevant?

Studies have identified correlations between children's stereotypes of scientists, their science identities, and interest or persistence in science, technology, engineering, and mathematics. It is critical to ensure students are exposed to non-stereotypical images of scientists as well as being able to identify knowledge of actual scientists.

Lesson Overview:

Essential Question(s)

What are the qualities of a good scientist?

Does the field of science benefit from diversity?

How can the science field be more inclusive?

Enduring Understanding(s)

People who have chosen a STEM career may have been exposed to an experience from their childhood that sparked their interest or from a unit of study or lesson in school.

Potential Misconceptions

Only students good in math or science should choose a career in STEM. Not all students are capable of being successful in math or science.

Learning plan, experiences, instruction and learning activities:

W

What is Expected?

- List the intentional learning objectives on the board.

Students will be able to:

- Describe the qualities of a good scientist
- Research and develop an argument for diversity in STEM fields

Today we will be working on...

H

What is expected?

How will we hook (Introduce this to) the students?

- Activate thinking
- Consider the language you will use to introduce the lesson (See example in the table)

Link to Engagement

Turn and talk to a partner about...What does a scientist look like? Do?

Put students in small groups of 3-4. Ask them the following questions and ask them to discuss in groups

- Draw a scientist doing science ? _ Have students draw a picture/describe
- What do scientists do? _Have students label drawing
- Where do they work?_ Have students make list
- Why does someone become a scientist? _Have students make list

- What makes a good scientist?_ Have students make a list

Ask students to hang their posters.

Direct students to do a wall walk and review their peers' posters.

Ask groups to reconvene and share a common themes they noted in posters.

Teacher should display pictures of 10-15 historical scientists and describe their contribution. (make sure selection reflects diversity)

Discuss obstacles in pursuing a science career someone may face.

Post pictures and share their contributions to science. Teacher introduces the ideas of inclusion and diversity in science fields.

E

What equipment, resources, or materials are needed?

Poster paper, markers, tape

Teacher created display of scientist (PowerPoint, Google slide)

Scientist resource

<https://www.famousscientists.org/popular/>

<https://www.noglstp.org/publications-documents/queer-scientists-of-historical-note/>

R

How will we rethink or revise our thinking throughout the lesson?

- What learning is confirmed?
- What misconceptions are uncovered?
- What is your new thinking?

Teacher facilitate a Q&A discussion:

Share students' answers on:

- *What does a scientist look like?*
- *What do scientists do?*
- *Where do they work?*
- *Why does someone become a scientist?*
- *What makes a good scientist?*

E

How will students self-evaluate and reflect on their learning?

Explore:

Ask students in their group to define “diversity” and “inclusivity”. Have groups share their answers.

Explain:

In groups, have students develop identify on what steps in the science fields– a company, research lab can take to be more inclusive?

As class create a class a set of norms to ensure inclusivity in science class.

T

How will we tailor learning to varied needs, interests, and learning styles?

Students will be able to research their own scientists to share with the class and choose the format to display/share their class norms.

Extend

Search for a scientist on social media in a field you would like to learn about. Reach out the scientist and interview them via Skype, Google Hangout or another teacher approved method.

Interview questions should be approved by teacher (10 questions minimum).

Post a reflection/summary of your interview on Flipgrid. Comment on 2 peers' reflections.

O

How will we organize the sequence of learning during the lesson?

Scaffold the Instruction

Model: Teacher will display and discuss scientist.

Guided Practice: Students will work in groups to identify traits of scientist with guiding questions

Independent Practice: Student can do Extend activity.

Check for understanding:

(Formative evidence such as conferencing, group Q/A, teacher observation, exit-slip, etc.)

Q&A Teacher directed

Group discussion – teacher observe and provide feedback

Student posters

Quiz/Test (optional):
(attach copy of assessment)

[Discussion rubric](#)

Performance Task/Project:
(attach rubric)

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Resources

Supplemental Resources:

- <https://www.glsen.org/educate/resources/curriculum>
- [GLSEN Guide for Best Practices](#)

Science and Engineering Practices

<https://www.nextgenscience.org/sites/default/files/Appendix%20F%20%20Science%20and%20Engineering%20Practices%20in%20the%20NGSS%20-%20FINAL%20060513.pdf>

<http://teach.ufl.edu/resource-library/inclusivity-in-the-classroom/>

<https://www.scientificamerican.com/article/lgbt-physicists-face-discrimination-exclusion-intimidation/>

<https://www.sciencemag.org/careers/2019/06/now-i-know-i-m-not-alone-study-highlights>

[-challenges-lgbtq-workers-stem-face](#)

<https://www.500queerscientists.com/>

<https://www.nytimes.com/2015/09/05/opinion/manil-suri-why-is-science-so-straight.html>

<https://www.scientificamerican.com/article/what-a-scientist-looks-like/>

<https://iamsciencestories.tumblr.com/>

<https://blogs.plos.org/absolutely-maybe/2017/03/06/how-to-guide-help-find-missing-scientists-faces/>

<https://www.vox.com/science-and-health/2017/3/11/14873706/photos-women-scientist-nih>

<https://blogs.agu.org/sciencecommunication/2011/07/20/why-scientists-use-twitter/>

<https://www.journals.uchicago.edu/>



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