Invention Project

PowerPoint Lesson Slides
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www.andrews.edu/go/invent

Andrews University STEM Division
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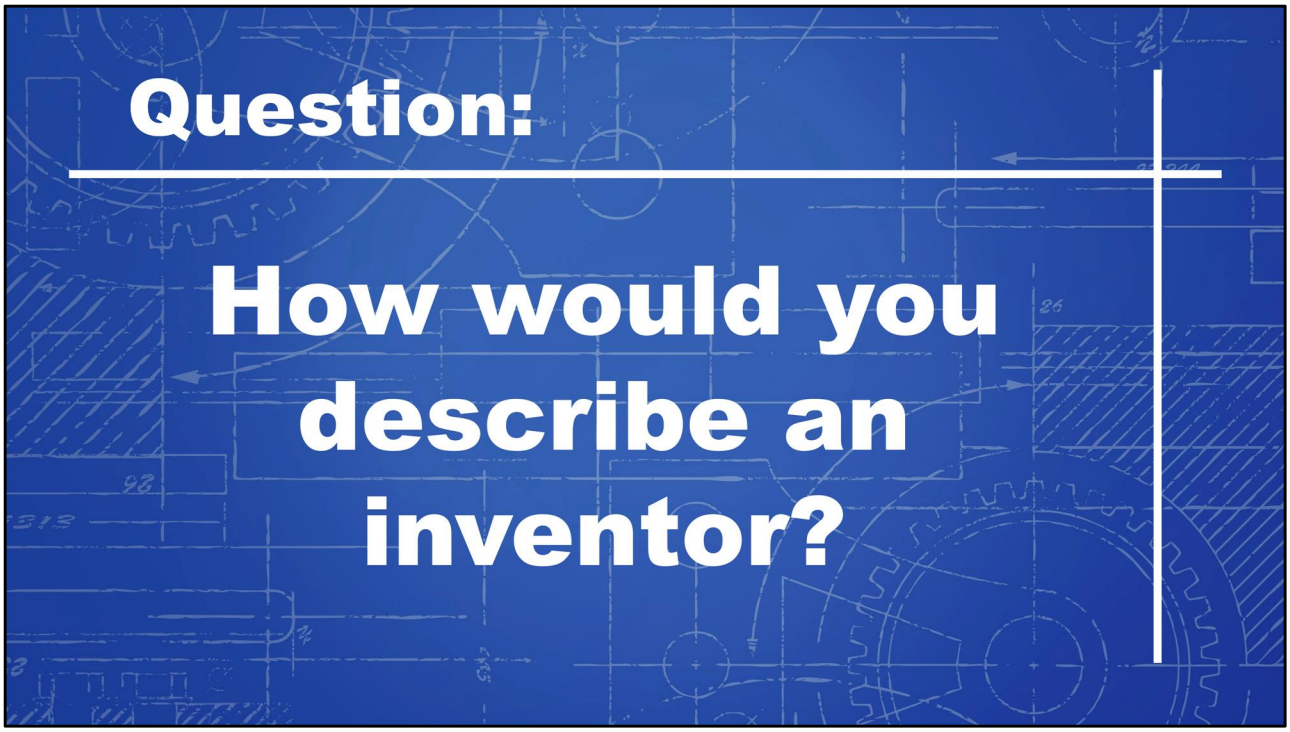
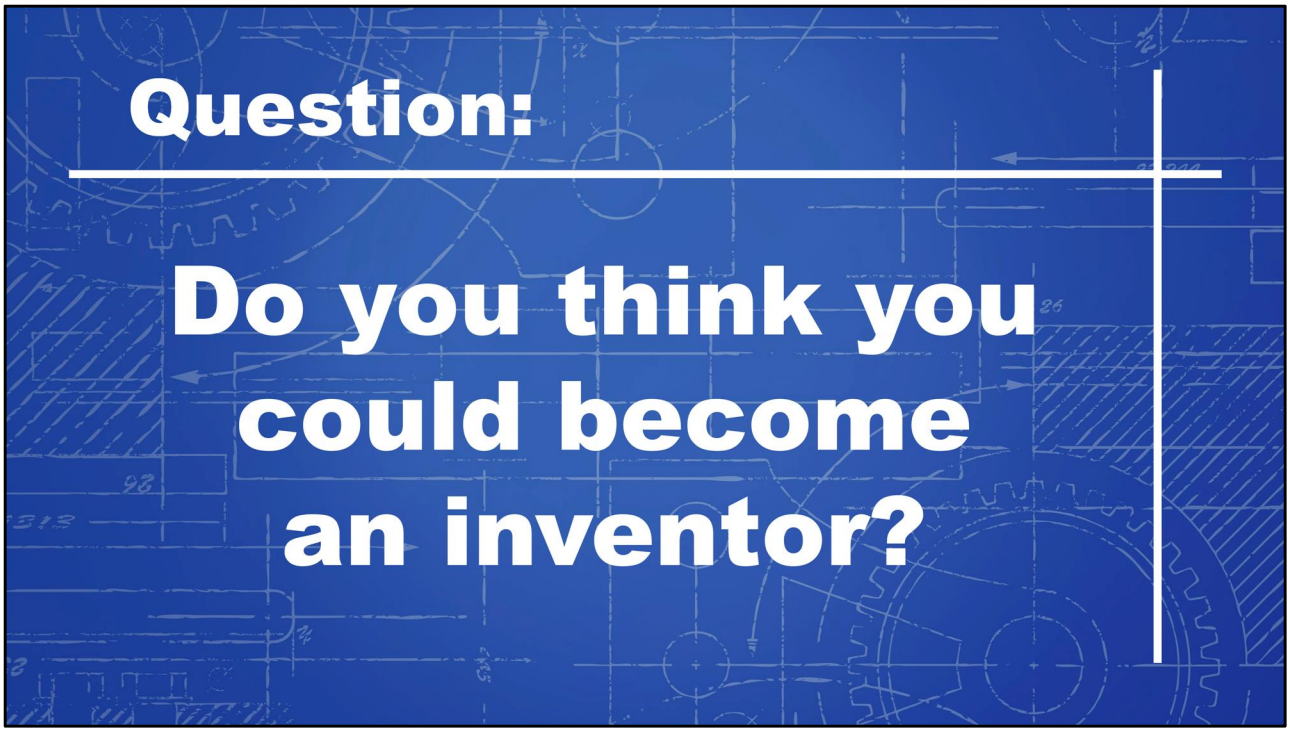
Note:
Some slides in the PowerPoint have text or images that appear out of place until full-screen playback. This is because some elements are animated and will not appear in the right place until the slide is played. There are also some animated transitions that require an extra slide to animate properly. These slides were simplified for the notes version to improve readability.

Page numbers in this document do not correspond to slide numbers in the PowerPoint.

Lesson 1: Who Are Inventors?



Discussion Question 1



Discussion Question 2

Possible Preconceptions:

- All inventors are adults.
- Inventors are a thing of the past.

Inventors can be YOUNG too! (examples – ages shown)

Benjamin Franklin (11 years old) – Swim Fins (1717) – handheld wooden paddles to swim faster

Louis Braille (12 – 15 years old) – Braille Alphabet (1824) – alphabet for blind people

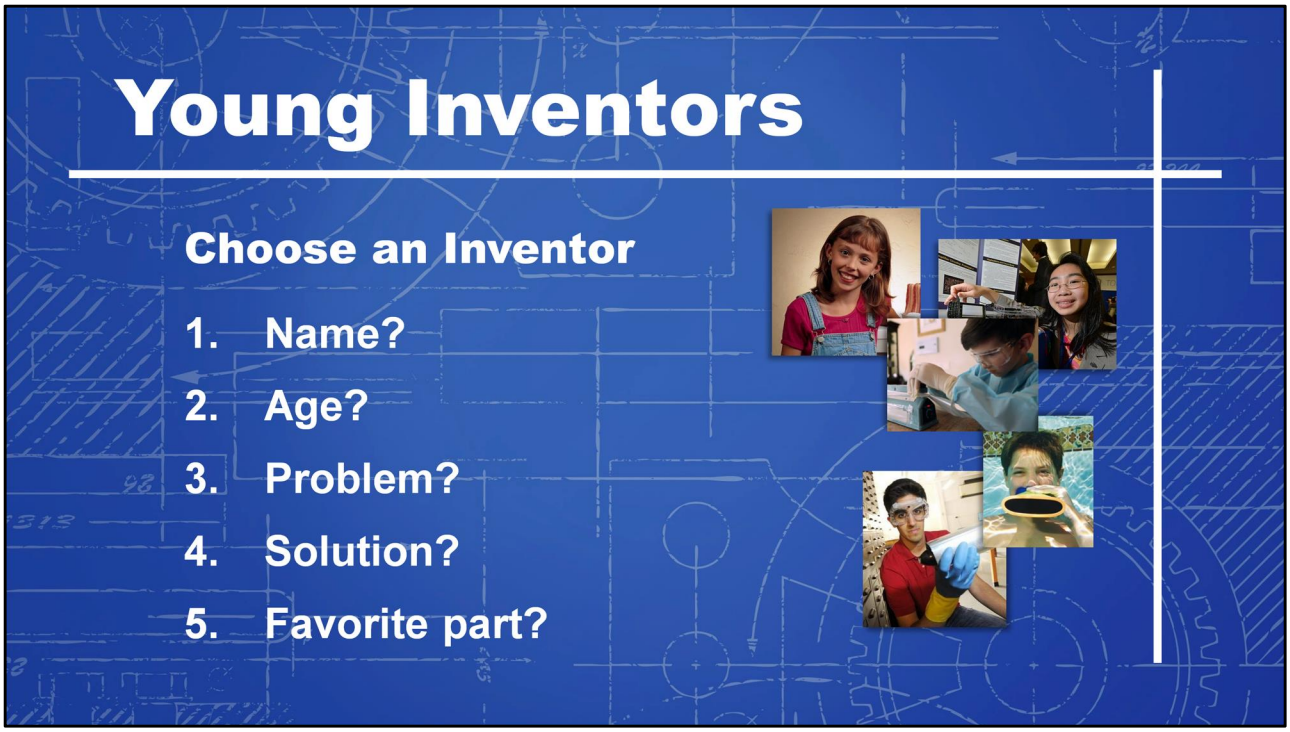
Peter Chilvers (12 years old) – Windsurfing Sailboard (1958) – a surfboard with sail attached

William Kamkwamba (14 years old) – Makeshift Windmill (2001) – recreated a windmill to power his family home

George Nissen (16 years old) – Trampoline (1930) – fun athletic equipment for gymnasts

Young Inventors: (modern examples – ages shown)

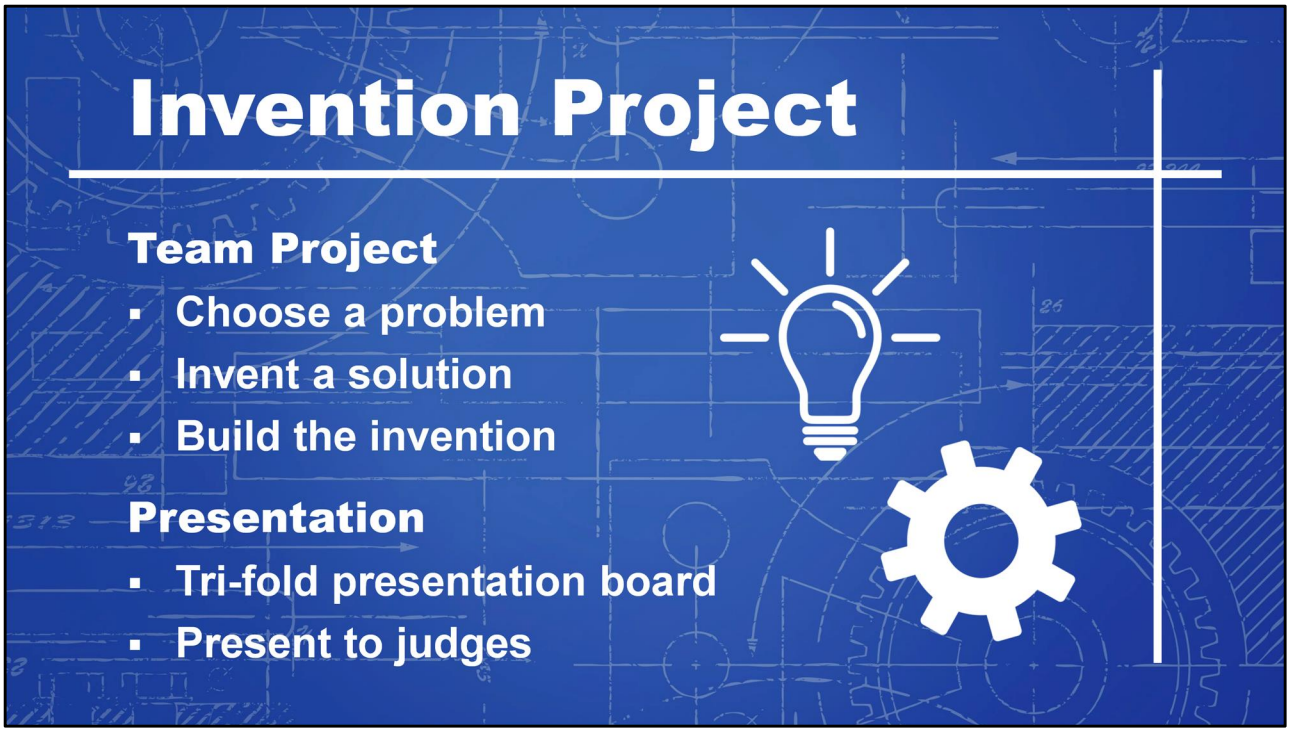
- Kids and teens of all ages can be inventors!
- Examples taken from activity (next slide)



Suggested Activity: Young Inventors

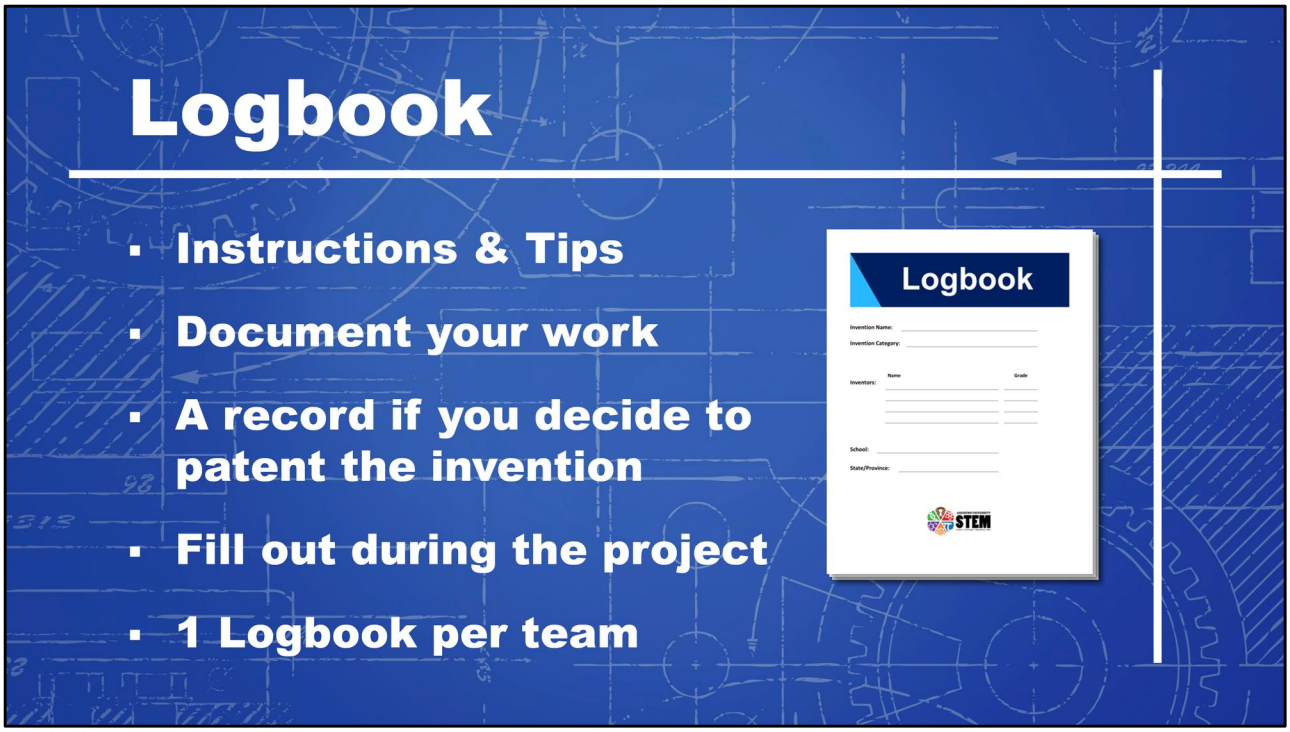
- Print activity sheets, provide websites, or direct students to other lists of inventors.
- Let each student/group choose 1-2 inventors.
- Students should identify the inventor's name, age, problem, solution, and favorite thing about the inventor/invention.
- Students can share with the class, in groups, or in a written response.

Handout available on our website: (Activities section in Teacher Resources)
https://www.andrews.edu/cas/stem/invent/downloads/young-inventors-activity_9-12.pdf



Invention Project Overview:

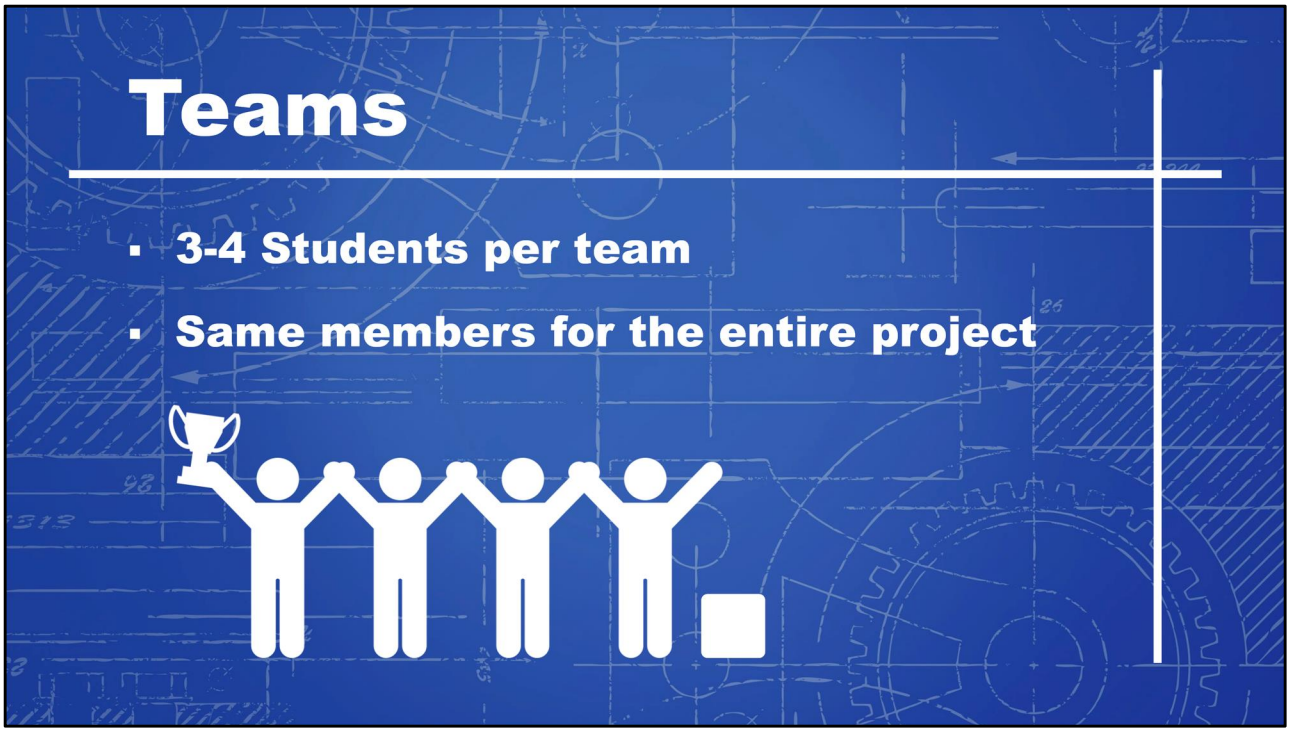
- Major components
- Goals & expectations
- Local invention fair



Introduce the Logbook:

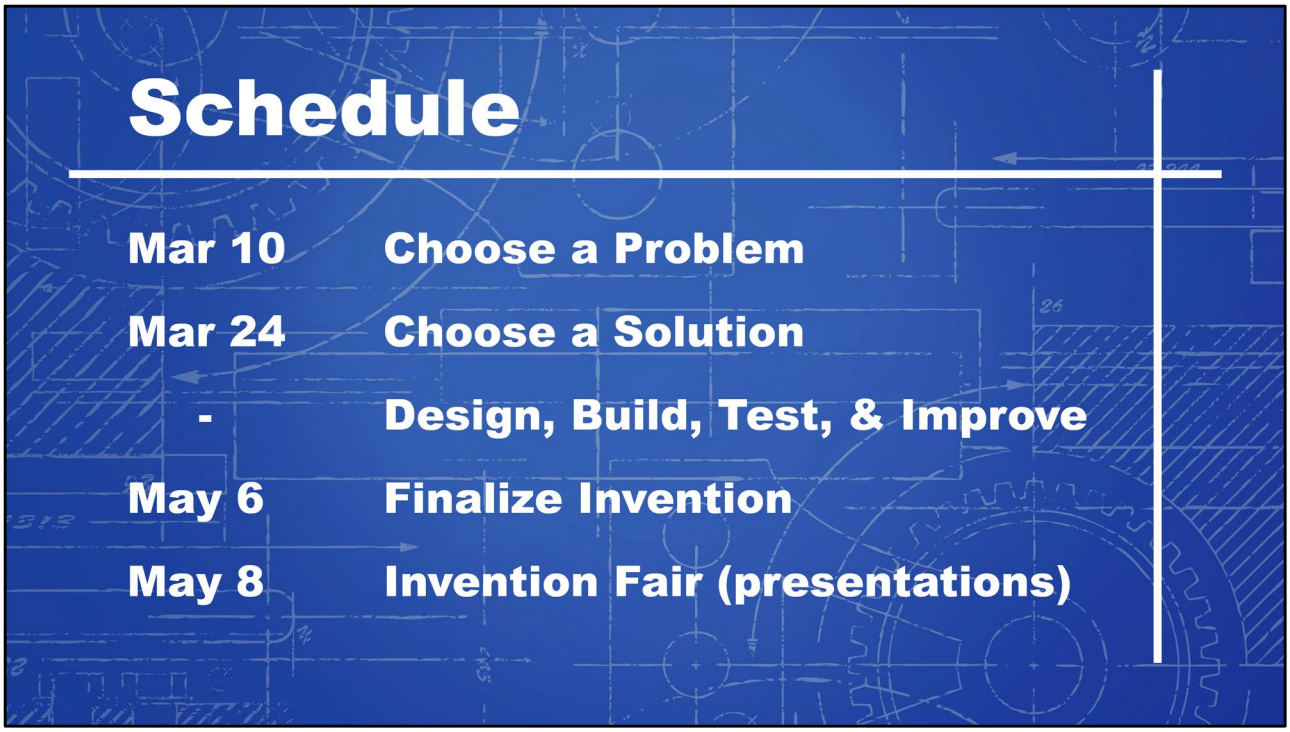
- Explain its purpose and use
- Fill out over time, not all at once
- Give each team 1 Logbook

Logbook available on our website: (Project Resources section in Teacher Resources)
https://www.andrews.edu/cas/stem/invent/downloads/logbook_9-12.pdf



Form Teams for the Project:

- 3-4 Students per team
- Smaller classes may need a team of 2



Example Project Schedule:

- Adjust the deadlines to match your schedule

Introduce Mission: Invent 2022

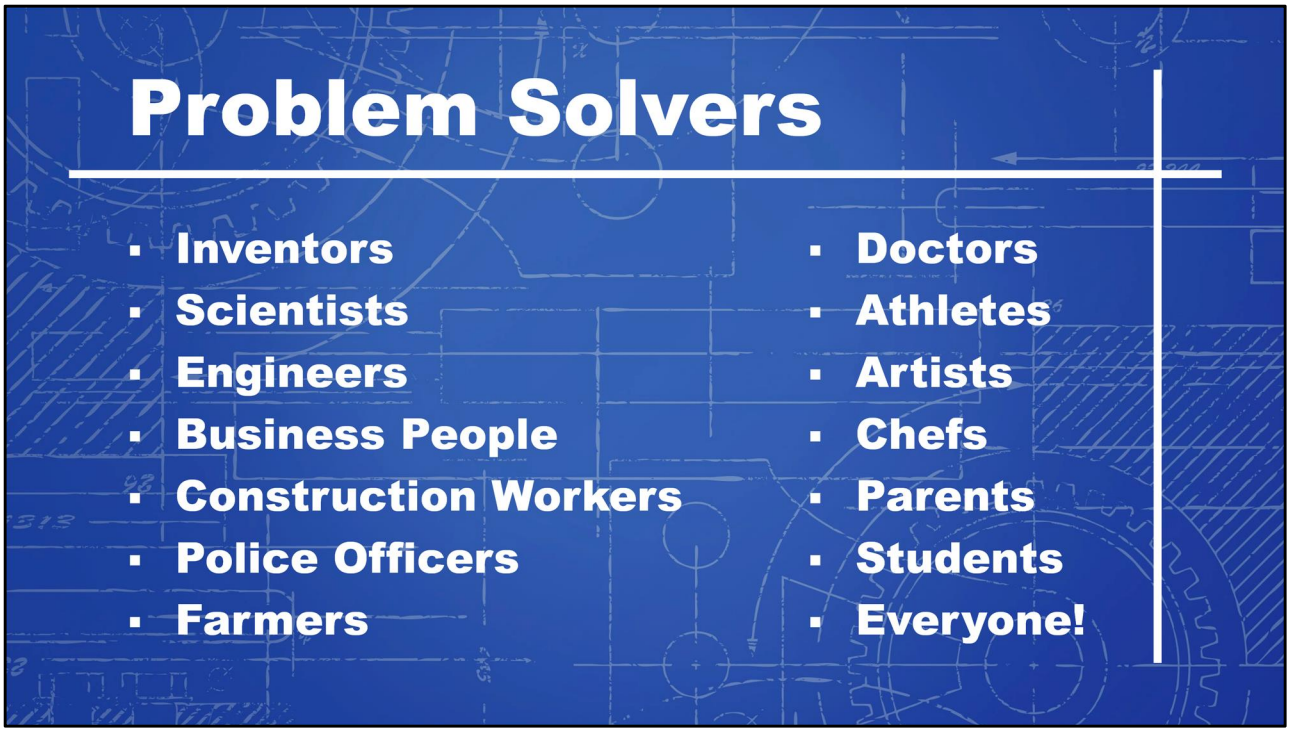
- Annual NAD-wide invention fair
- Top inventions from each school are eligible to enter

Question:

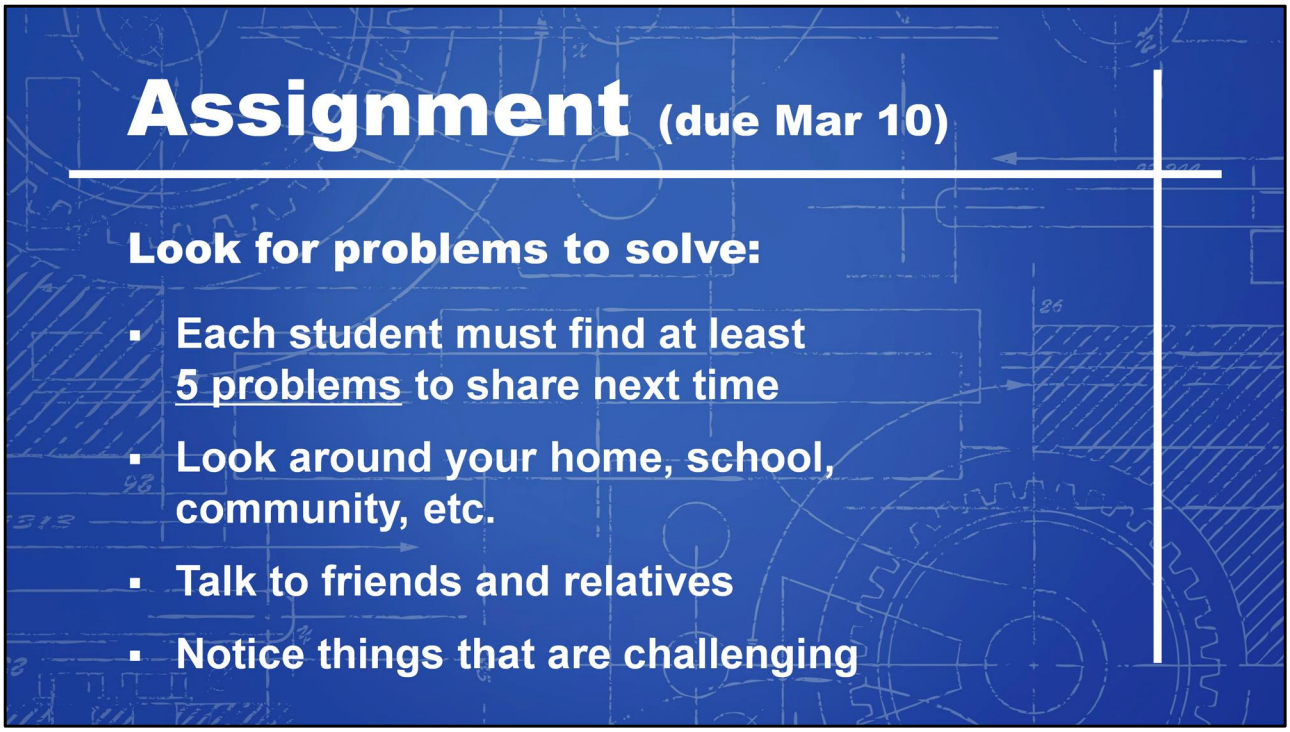
- What if someone doesn't want to be an inventor?
- Why does this project matter?

(answered on next slide)

This project is important because it teaches students to be problem solvers. Everyone needs to solve problems of some kind, whether professionally or privately. This project emphasizes STEM and teaches problem solving in this context, but the skills can be extended to every area of life.



Everyone is a Problem Solver!



Assignment: (due next class – adjust date accordingly)

Each team will need to choose a problem by the end of next class. To prepare for this, students need to find problems to share with their team.

Read the Logbook for more information (pg. 7).

Worksheet available on our website: (Project Resources section in Teacher Resources)
https://www.andrews.edu/cas/stem/invent/downloads/logbook_9-12_problem.pdf


Invention
Project