

NAME: _____ DATE: _____

Invent an assistive device



Option 1: More Structured, Greater Direction

BACKGROUND:

Many persons with disabilities find it challenging to enjoy waterparks and amusement parks as freely as non-disabled persons. Rory Cooper invented a special wheelchair called the Pneu-Chair for Morgan's Wonderland park to allow children using wheelchairs to access the waterpark. [Video of Pneu-Chair and how it works.](https://www.youtube.com/watch?v=slc5PVDLQMM) (www.youtube.com/watch?v=slc5PVDLQMM)

DIRECTIONS:

Use the research template on page 3 of this activity to investigate the needs of people with disabilities

1. Research a challenge that a person using a wheelchair would experience at a water park or amusement park. Example: A person in a wheelchair loading into a rollercoaster car.
2. Research and interview a beneficiary (someone who would benefit from your invention), then clearly define the challenge you are trying to solve.
3. Draw your invention and label all components, describing their function.
4. Make a rapid prototype (fast version) of your invention to prove the concept (that it can work). Example: Building bricks or building toys would make a great way to create a small (scaled) rapid prototype.
5. Test your rapid prototype, and modify it as needed.
6. Once satisfied with your testing results, build a revised version of your working prototype.
7. Share your invention with an audience (classmates, adults, friends).

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Option 2: Less Structured, More Student Choice

BACKGROUND: Many persons with disabilities find it challenging to enjoy waterparks and amusement parks as freely as non-disabled persons. An assistive device helps a person with a disability perform a task or provides equitable access. Engineers and inventors often develop ideas that they turn into working prototypes and eventually into products that people use to assist them in their daily activities.

DIRECTIONS:

Use the research guide on page 3 of this activity to investigate the needs of people with disabilities.

1. Research a challenge that a person with a disability faces.
2. Research and select a specific problem associated with the situation a person with the disability is challenged by and what they need to perform tasks equitably.
Example: A person with arthritis that cannot hold a spoon while eating from a bowl.
3. Through further research and an interview with a beneficiary (someone who would benefit from your invention), clearly define the problem you are trying to solve.
4. Draw your invention, and label all components, describing their function.
5. Make a rapid prototype (fast version) of your invention to prove the concept (that it can work).
6. Test your rapid prototype, and modify it as needed.
7. Once satisfied with your testing results, build a revised version of your working prototype. Share the assistive device you invented with an audience (classmates, adults, friends).

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RESEARCH GUIDE

Investigate and study information and materials to discover more about your topic.

DIRECTIONS: Research the technology that is your invention's basis to fully understanding your idea's information. Record the source and notes in the space provided below.

Evaluating Internet Resources

Anyone can post information on the internet, and it is not subject to review for accuracy or validity. Therefore, responsibly assess your sources as you find them.

What do you need to ask yourself as you read information from the internet?

- What do you know about the author?
 - name and credentials
 - contact information
 - connection to a reliable organization
- Why did the author post a web page?
 - to inform an academic audience
 - to persuade readers or sell something
 - to inform or teach lay people
- What is the author's objective?
 - to acquire backing from an organization
 - to sell an idea or product
 - to arouse emotion using words that are part of a "cause"
 - to disregard or portray information as factual even if it's not
- How accurate is the information?
 - it demonstrates that other reliable sources verify the information
 - it is associated with an organization or author that is accountable for the information posted
 - it has been reviewed by experts
- How reliable is the information?
 - it is supported by evidence which is cited
 - it is verified by other institutions (.edu and/or .gov)
 - it has been verified by your school librarian

Searching for inventions like your idea can help you in two ways. You may have a brand new idea or change something existing to make it unique, improved, and novel. Searching can help you protect your IP.

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Source: _____

Notes: _____

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