

MAKER Connect – Make a Digital Accessory

More and more people are interacting with mobile technology on a daily basis. They use their devices for a number of different things such as telephone calls, surfing the web, playing games, watching movies, and listening to music. With this, they also face many challenges.

Look at the images below.

- What can you see?
- What problems can you see?
- How did these problems occur?
- What new design opportunities are there?



Student Worksheet – Make a Digital Accessory

Name(s): _____ Date: _____

Defining the Problem

What problems can you see in the pictures? Pick one problem and explain it below.

Brainstorm

Individual work: Now that you have defined a problem, take three minutes to generate ideas for solving it. Be prepared to share your ideas with your group.

Group work: Share and discuss your ideas for solving the problem.

Documenting your work is very important during the design process. Record as much as you can through sketches, photos and notes.



Use LEGO bricks and sketches to explore your ideas.



Sometimes simple ideas are the best ideas.



Define the Design Criteria

You should have generated a number of ideas. Now select the best one to make.

Based upon your brainstorming discussion, write down two or three specific design criteria that your design must meet:

1. _____
2. _____
3. _____

Go MAKE

It is time to start making. Use the components from the LEGO® set to make your chosen solution. Test and analyze your design as you go and record any improvements that you make.

Review and Revise Your Solution

Have you managed to solve the problem that you defined at the beginning of the lesson? Look back at your three design criteria.





How well does your solution work? Use the space below to suggest three improvements to your design.

1. _____
2. _____
3. _____

Communicate Your Solution

Now that you have finished, make a sketch or take a photo of your model, label the three most important parts, and explain how they work. You are now ready to present your solution to the class.

Assessment

				
GOALS	BRONZE	SILVER	GOLD	PLATINUM
<p>MAKER Task:</p> <p>_____</p> <p>_____</p> <p>Linked to: NGSS Practice 6 Designing Solutions</p>	<p>• We successfully built and tested one design based upon a single design criteria and design idea.</p> <p><input type="checkbox"/></p>	<p>• We successfully used two design criteria and ideas to build a solution to the defined problem.</p> <p><input type="checkbox"/></p>	<p>• We met Silver, and refined our idea to improve it further through testing, revising, and retesting.</p> <p><input type="checkbox"/></p>	<p>• We met Gold, and successfully met all three design criteria.</p> <p><input type="checkbox"/></p>

Well done! What will you make next?

Design criteria example:
The design must...
The design should...
The design could...



You can use other materials from around the classroom.



Print your photos and attach all of your work to a legal size sheet of paper or card stock.

