Building from Home: weeks 8-9—RECOVER(?)

Mr. Lee's Technology class—App Creators, Computer Science for I&M, Design & Modeling, Automation & Robotics

Name:	Date:	Class period:

Introduction: RECOVER(?)

We keep hearing in the news that people are getting tired of being at home or inside and want to go out and DO what they're familiar with. Not just yet. We have a LONG way to go in order to get back to work, and school, and "normal." What school looks like right now is changing, as well as any summer plans that any of us may have made. What we know is: we're on our way to recovery.

Remember: you can choose to do PLTW activities for App Creators or CSIM online. See the instructions in Teams. You can do these activity pages as work to keep you engaged in problem solving. You can also do the alternative assignment that just posted in Teams as well. Remember to read carefully. Whatever you do, it will improve your grade.
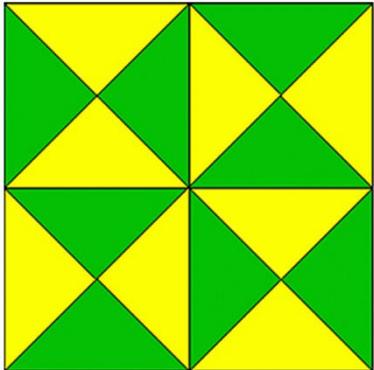
DIRECTIONS:

Pick one of these activities to start with. Then do another one. Challenge yourself to a third or even a fourth!

Activity 1: MAKE SOMETHING (building challenge)

1. Your challenge is to make a catapult. This will require you to have some materials like: paper clips, a plastic bottle cap, some glue, craft/popsicle sticks, a marble or bouncy ball, and a few rubber bands.
2. This picture shows one way of doing this:
3. Challenge: make a better one. Or improve your design with what you have and make your payload go farther, or higher. Or make a game where you have to hit a certain target in the least amount of tries. Or go online and search "mini catapult" and look what others have created and COPY.

Activity 2: SOLVE SOMETHING (brain work)

1. **Problem** of the week: How many triangles in this picture?
2. **Try: The River Crossing Riddle** at Ted Ed—watch the video, then answer the questions in the "Discuss" section.

Activity 3: READ SOMETHING (and then summarize)

1. Find a magazine—any article, even online—then read it on your own or to someone else. Then write a summary.
2. Or: read and summarize the article on the back—make sure to include the following in your summary:

Who is the article about	**What** is the article about	**When** did it take place
Where is the action happening	**Why** did this event happen	**How** was it completed
Problem or challenge in story	**Result** (success or failure)	**Lesson** that was learned

Activity 4: DO SOMETHING (for this class)

1. PLTW. You can now do App Creators (MIT App Inventor) or Computer Science for Innovators and Makers (MS Makecode) online. Send me screenshots of code you finish. This week, focus on:
   a. App Creators: finishing up 1.4 and doing 1.5, and then start on 1.6
   b. Computer Science for Innovators and Makers: finishing up 1.5, do 2.1, then start 2.2
2. Email me. Let me know what you are working on, any struggles you are having, or materials you may need. I can have Ms. Maddy check out micro:bits or other materials to you during lunch pickup.

Contracts made for spacecraft to land NASA astronauts on moon

Wed, April 30, 2020 **By Christian Davenport** Washington Post

NASA on Thursday awarded three companies contracts to build spacecraft capable of landing humans on the moon, sparking a new space race that NASA hopes will propel the United States back to the lunar surface for the first time since 1972.

Blue Origin, the space outfit owned by Jeff Bezos; Dynetics, a subsidiary of the techology firm Leidos; and Elon Musk's SpaceX won contracts, giving NASA three options that would compete against one another as NASA scrambles to meet a White House mandate to put humans on the moon by 2024. (Bezos, Amazon's founder and chief executive, owns The Washington Post.)

Boeing, typically among NASA's key contractors but whose space program has experienced setbacks and delays, submitted a bid but was not selected.

In an interview with The Washington Post, NASA Administrator Jim Bridenstine said he remains confident that NASA will be able to meet the 2024 deadline even though the first flight of the Space Launch System, the Boeing-built rocket that would launch astronauts to the moon, will be pushed back again, this time to November 2021.

Still, the announcement of contracts for the landers – the first lunar spacecraft contracts NASA has awarded since the 1960s Apollo era – is a significant step toward getting the U.S. crews to the moon quickly and building what NASA hopes will become a permanent presence on the moon's surf ace.

A lunar landing is "starting to feel very, very real," Bridenstine said. "It's very exciting. There have been lots of attempts to go back to the moon since 1972, but none have materialized."

It's not clear that NASA's latest effort, named Artemis for the twin sister of Apollo, will materialize.

To give itself a better shot at pulling off the feat by 2024, NASA has changed its plans. NASA was going to fly its astronauts to an outpost, known as the Gateway, in lunar orbit. From there, they would descend to the surface. But now NASA says that while it remains committed to the Gateway for the long term, it will not use it for the next moon landing. Instead it intends to fly astronauts in the Orion spacecraft, built by Lockheed Martin, to lunar orbit, where it would meet up and dock with the lander, which would take them to the surface.

For that to become a reality, NASA and the White House must sell their plan to a skeptical Congress, which has not signed approved a program projected to cost $35 billion through 2024. NASA and Boeing, the prime contractor on the SLS program, also would need to make significant progress on the rocket. A recent Government Accountability Office report said that despite years of development, the rocket "may develop leaks when it is filled with fuel." Another recent report, by the agency's

This illustration from NASA shows Artemis astronauts on the Moon. NASA announced the three companies that will develop, build and fly lunar landers, with the goal of returning astronauts to the moon by 2024. (AP)

inspector general, said the cost of the SLS, Orion spacecraft and associated ground systems could be as much as $50 billion.

NASA is struggling to get to the moon under a drastically expedited timeline. Initially it was planning to put humans on the moon by 2028. But Vice President Mike Pence last year directed the space agency to do it by 2024 "by any means necessary."

The plan is attainable, Douglas Loverro, NASA's head of human spaceflight, said in an interview.

"This is a first giant step, but it's only the first step," he said. "We have so much work ahead of us. Now the hard part begins. And it's going to take the best of NASA and the best of industry to get there."

NASA officials declined to comment on Boeing's absence from the list. The loss for the aerospace behemoth comes as it has struggled not only with the SLS rocket but with the Starliner spacecraft it is developing to fly NASA astronauts to the International Space Station in low Earth orbit. A recent test mission without crews aboard went so badly that the company decided to redo the flight.

For Blue Origin, the contract award is a major victory. Founded in 2000 by Bezos, the company has for years been urging the space agency to return to the moon, specifically the south pole, where scientists have discovered ice.

The company has been pitching its lander, called Blue Moon, since 2017, and Bezos has said he would invest heavily in it. Last year, Blue Origin announced that it was teaming up on the project with Lockheed Martin, Northrop Grumman and Draper – "a national team for a national priority," Bezos said. "This is the kind of thing that's so ambitious that it needs to be done with partners. This is the only way to get back to the moon fast. We're not going back to the moon to visit. We're going back to the moon to stay."

The award was the latest in a string of wins for SpaceX, which is poised to fly NASA's astronauts to the space station on May 27. NASA had awarded SpaceX a contract, worth as much as $7 billion, to resupply the Gateway with cargo.