



Virginia 4-H MAKING the Future

18 U.S.C. 707

WWI Maker Activities

Overview. . .

The maker activities included in the Virginia 4-H WWI Maker Activities Toolkit are structured for facilitators to intentionally move learners across a continuum of guided to open-ended learning experiences.

The guided activity is offered with step-by-step instructions on the activity handout for each of the WWI topics. This is often used as a starting point for facilitators who are working with the topic for the first time. It gives youth and facilitators who are unfamiliar or reticent with the topic an opportunity to learn together, become familiar with the concepts and provide opportunities for hands-on/minds-on learning. Facilitators integrate facts and concepts from the “Science Behind It” and the “History Behind It” handouts and prompt with questions to dig deeper into what learners know and to re-engage or redirect as needed.

The activity handouts also provide a “What happens if” section which invites learners to take the guided activity a little further - to open it up for expanded learning. Learners change a variable and try it again which acts as a springboard for further investigation such as repeated trials or testing a hypothesis. They could also add a new dimension to the activity or think about it in a new way for presentation from the question prompts provided.

An open-ended “make” activity often emerges out of the first two experiences. It is a response to “What if?” or “Could we?” or “Let’s try...”. It is sometimes prompted by a question, a problem or challenge that piques learner interest to create a solution. For example, in the airplane activity youth are asked to “make a plane that is designed or folded differently”. They are also asked to “launch your plane in a straight line versus an upward arc”. It allows youth to act on what they’ve synthesized from the earlier experiences and take an idea to another level or explore the working on their own. Youth can move through a guided activity to a more open-ended activity to a “make” or they could start with a “make” and be encouraged to tinker with piles of cardboard, tape, and unique collections of “stuff”. Facilitators will know their groups and be able to gauge if they need the guided to more open-ended activity before the “make” activity or if they want to dive into an open-ended make activity for exploration before they try the guided activity on a specific topic. See more information on the Maker Education handout. See additional suggestions below.

Activities

Seed Tape - Make a seed tape from cornstarch and toilet paper

Stretching the Brain: Have youth experiment with harvesting their own seeds from various vegetables. They could dissect the vegetable, identify the seeds and other parts of the vegetable.

(www.extension.umn.edu/garden/yard-garden/vegetables/saving-vegetable-seeds/) What are some new recipes that you could make out of that vegetable?

Inventing our Future: Invent a new planter or method for planting a garden in an urban environment? What could they invent to improve the food supply in areas that have food deserts?

Codes and Ciphers - Make a cipher disk and write a message in code

Stretching the Brain: Have youth make their own code with a revised cypher wheel or a new device for writing the code. Have the practice doing a task in pairs or in a group, using only the new code.

Inventing our Future: Have youth think about ways that we may communicate in the future and invent items to help anyone who needs help with communication (hearing impaired, sight, etc).

Making Music - Make musical instruments (flute, trumpet, guitar, drum) out of everyday items.

Stretching the Brain: Have youth experiment with making new instruments out of recycled materials – bring in various materials and challenge them to make a new instrument (www.landfillharmonicmovie.com). Create a band with all recycled instruments – arrange a concert for the group.

Inventing our Future: Think about how the instruments create music and think of other ways in which musical sounds could be used to solve a problem. As a new type of alarm? As a remote-controlled animal toy?

The Hello Girls - Make a phone from paper cups and string

Stretching the Brain: Encourage youth to develop various sound transmission devices made from every day and recycled objects such as altered plastic bottles, funnels, and cans. What materials worked best to carry the sound? What materials worked best to amplify the sound? Another activity to help youth explore the science behind sound travel is to collect older telephones and cell phones and allow youth to take them apart and identify the function of the various parts. Encourage youth to repurpose some of the parts/components in new ways such as jewelry or a flashlight – encourage creative thinking!

Inventing our Future: Encourage youth to identify a telephone or related sound problem that needs to be solved. Have them work together to develop a solution. Invite youth to create a new communication device that would be representative of the next upgrade to cell phones.

Airplanes - Make an airplane out of paper

Stretching the Brain: Have youth use a variety of recycled materials to make an object that can fly – perhaps adding a constraint of using a minimum of 4 different objects. Do time and distance trials to reflect on what materials worked best and why (record trials).

Inventing our Future: Ask youth to apply what they learned about the four forces that impact flight. Have them design a new plane that uses these forces in one new way, then two new ways.

Monuments - Make a monument out of everyday items

Stretching the Brain: Have youth make a monument out of a variety of recycled materials (cardboard boxes, duct tape, Styrofoam, etc). They can create a story behind the monument and plan a dedication ceremony.

Inventing our Future: Ask youth to create other ways to recognize and memorialize a person or event other than a static monument. How could electronics play a role. How could it be interactive?

Boats - Make a self-powered boat out of paper and rubber bands

Stretching the Brain: Have youth use a variety of recycled materials to make an object that can float. Do speed and distance trials to reflect on what materials worked best and why (record trials).

Inventing our Future: Ask youth to apply what they learned about the law of buoyancy. Have youth design a vessel that can float and hold various weights.

Writing to Soldiers - Partner with local support agencies to write postcards to our current soldiers.

Stretching the Brain: Have youth create “types” of paper to match emotions for different backdrops in letters to soldiers.

Inventing our Future: Encourage youth to create different “conversation getters” to get current soldiers engaged in writing, such as “Pretend you are in your most perfect place in the world. What is around you? What do you feel? What is happening? How does this relate to your job with the military? Don’t worry – you can be funny!”

www.ext.vt.edu/topics/4h-youth/makers

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