Using the Outdoors and Agriculture To Engage Students

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Introduction to Agriculture and the Outdoors

01

Let's start with introductions.

Integration of Agriculture and the Outdoors

02

Next we will look at integration across the curriculum.

Resources

03

Lastly a list of resources.

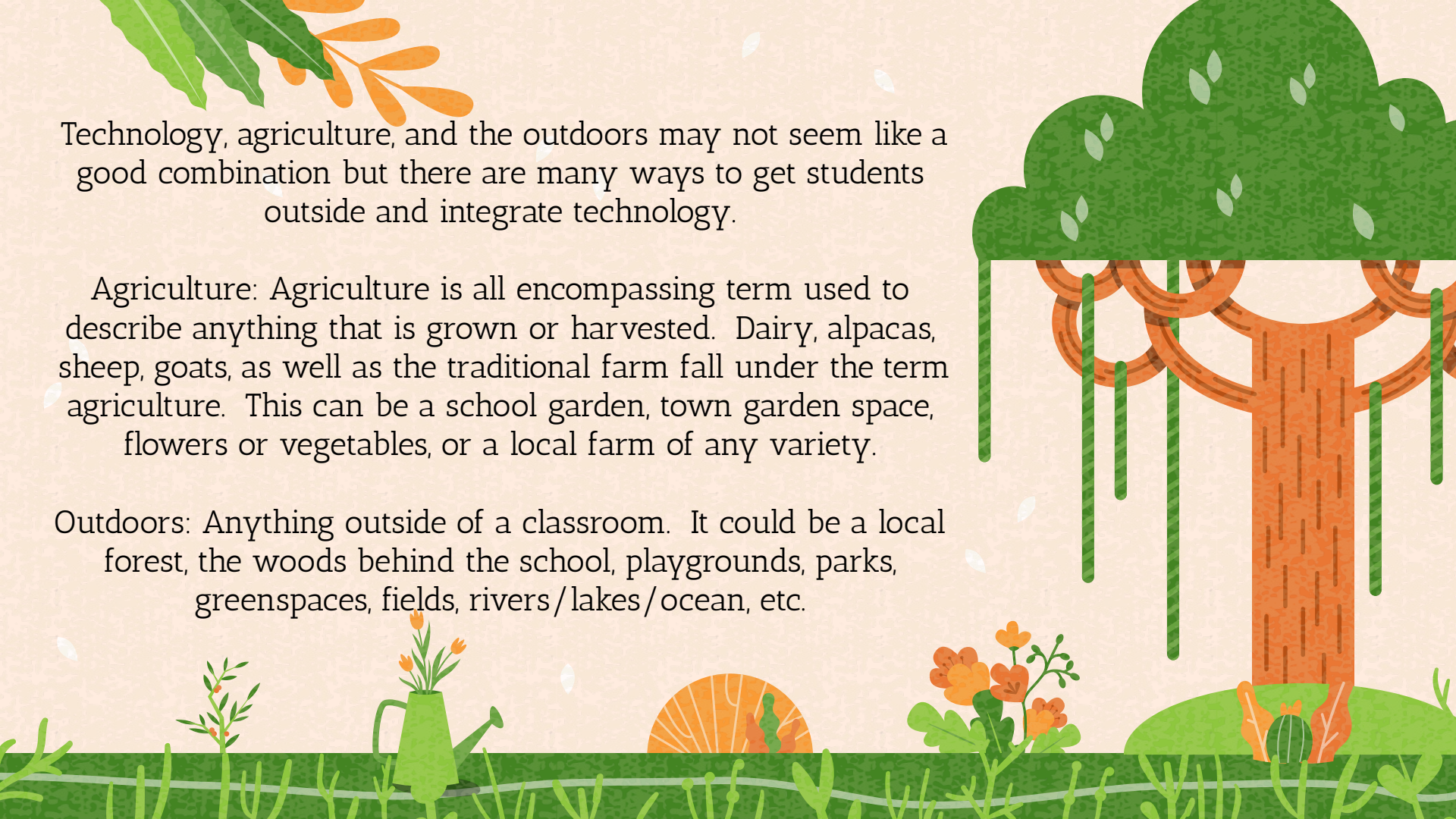
01

Introduction to Agriculture and the Outside

Technology, agriculture, and the outdoors may not seem like a good combination but there are many ways to get students outside and integrate technology.

Agriculture: Agriculture is all encompassing term used to describe anything that is grown or harvested. Dairy, alpacas, sheep, goats, as well as the traditional farm fall under the term agriculture. This can be a school garden, town garden space, flowers or vegetables, or a local farm of any variety.

Outdoors: Anything outside of a classroom. It could be a local forest, the woods behind the school, playgrounds, parks, greenspaces, fields, rivers/lakes/ocean, etc.



02

Integration of Agriculture and the Outside

STEM

Spreadsheets

Spreadsheets are great for keeping track of data that students have gathered.

CAD

Use Sketchup to design or make maps of outdoors spaces

Citizen Science

Gather data that can be used to answer scientific questions around the world

Simulations

Simulations can be used to support claims about outdoor projects.

Humanities

Journaling

Use technology to add images to journals.

Animation

Create animations that tell stories about the outdoor space.

Digital mapping

Create digital maps of the space.

Virtual tours

Create virtual tours of the outdoor space

Allied Arts

Macro Photography

Take really close up pictures of objects to see tiny details.

Planting with robots

Code a robot to simulate seed planting in a garden or build a robot to plant the actual garden.

Bird Identification

Practicing listening and identifying bird calls.

Food Sources

Investigate where our food comes from with digital tours.

03

Resources

Spreadsheets

	A	B
1	Circumference of a pumpkin (inches)	Number of seeds in the pumpkin
2	14	106
3	10	87
4	15	132
5	6	36
6	11	96
7	17	195

Spreadsheets are a great way to keep track of data.

Some potential uses of spreadsheets are:

- Visualizing relationships
- Crop rotations
- Tree inventory
- Germination rates
- Soil quality
- Historical data of the site
- Data analysis
- Computational thinking with algorithms
- Drawing conclusions
- Organizing evidence

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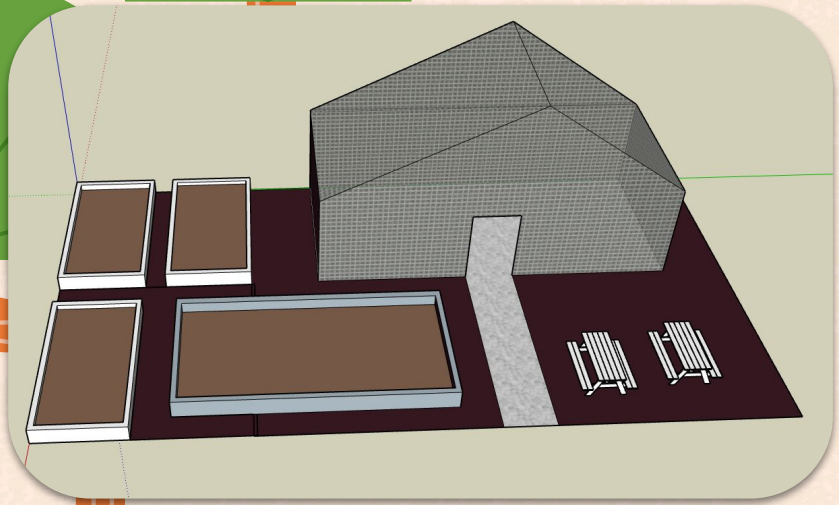
CAD



Computer aided design is a great way to plan out a project or to create a map of an outdoor area. Sketchup is a free and very user friendly way to make 3D designs of spaces.

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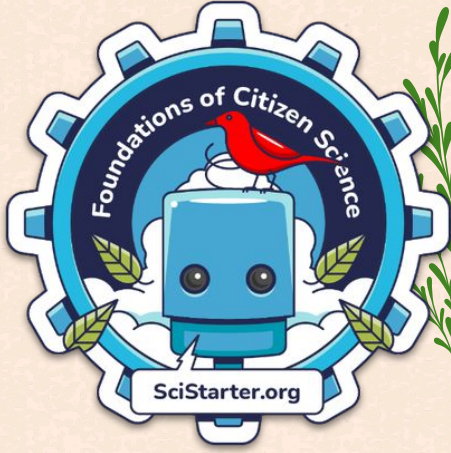
Citizen Science



Citizen science is a way to gather authentic data and share it with scientists all over the world.

Click here to view the asynchronous PD I did on citizen science.

Click here for the slide deck with resources and integration ideas.

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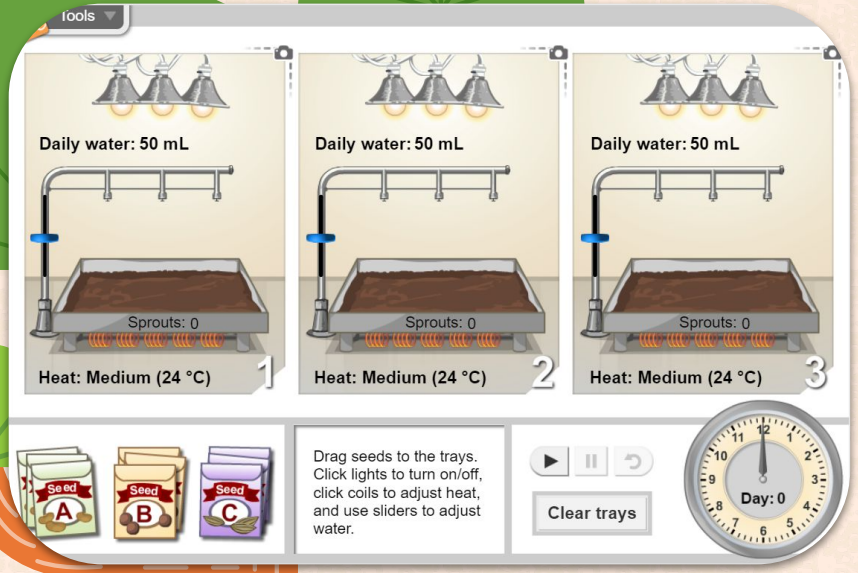
Simulations



There are some things that are too difficult and time consuming to create experiments for. That is where simulations can fit in.

Click here to view my asynchronous PD on using simulations.

Click here to view the slide deck with resources and ideas.

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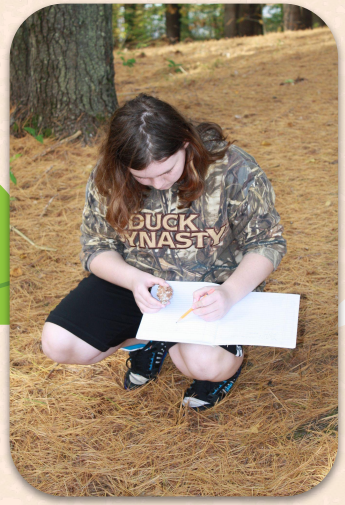
Journaling



Journaling and observing an outdoor space is a great way to get outside. Couple the writing with digital photography or convert hand drawn sketches to 3D images using the website svg2stl.

Click this link to learn more about how to turn a 2d drawing into a 3D image.

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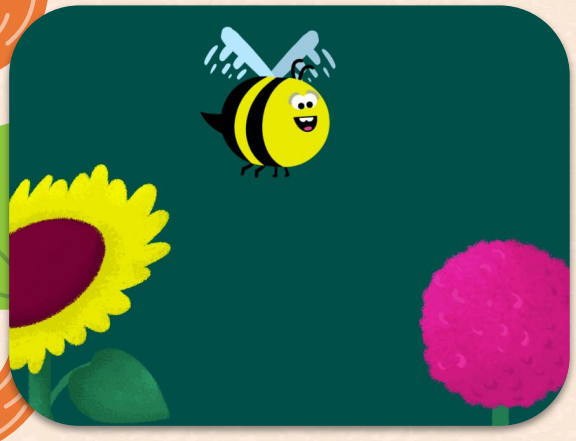
Animation



Animation can be used to make models of outdoor phenomenon. Students can create an animated water cycle, carbon cycle, the travels of a bee, butterfly migration, etc.

Click here to learn more about how to create animations in Google Slides.

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Digital Mapping

Google Earth and Arcgis are fantastic ways to create digital maps of outdoor areas. These maps can be used to create local trail systems, update parks and green space, or plan a school garden.

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Virtual Tours

Using VR students can take virtual field trips to far away outdoor spaces like the Amazon and the Great Barrier Reef. It can also be an opportunity for students to create VR experiences for other people around the world.

Click here for PD on integrating VR into the classroom

Click here for a short tutorial on how to use CospacesEDU.

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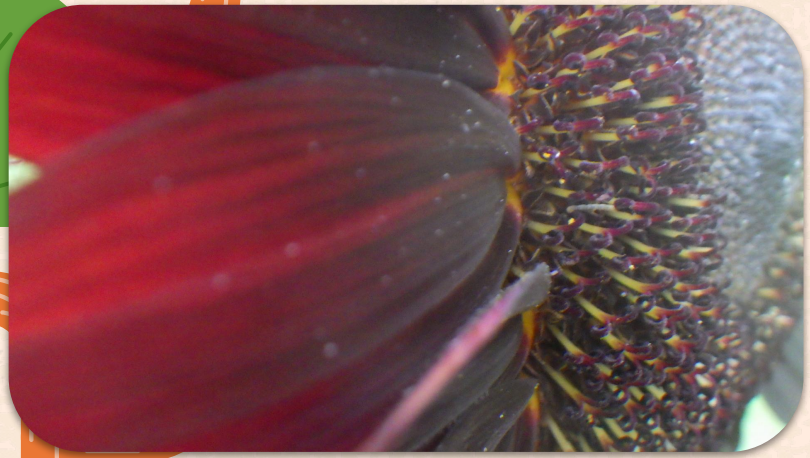
Macro Photography



Using the Macro feature on cameras students can take up close pictures of objects they find while outdoors.

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Planting with Robots

Creating and coding a robot that can plant a model of the garden can help with planning of actual planting later on. Students could also develop and robot that plants seeds in the real garden.

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Bird Identification

Students can practicing their listening skills by listening and identifying bird calls. The Cornell School of Ornithology has a vast library of bird calls on its mobile app. It can even identify the bird but listening to the call.

Click here for the Cornell School of Ornithology page.

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Food Sources

Using video chat students can talk to farmers around the world to discover where their food comes from and how it gets from the farm to the table.

Journey 2050

Journey 2050 is a online game that teaches students about where their food comes from, and sustainability from the perspective of feeding the population of the world in the year 2050.

Thanks

THANKS!

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Click here for a contact hour