

Grade 3: Supporting local Ecosystems- Careers, ADST and Science

Materials Needed: Cycle Image Design Thinking, gradual release sheet (for teacher reference), SDG flip cards, LRC Kits/Books from your library, Empathy handout, 1 x 4 wood, Lath, nails, dirt, seeds, school toolbox/Maker Cart, reflection sheet, Design Thinking Project Sheet, Sustainability Resources: <https://www.comoxvalleyschools.ca/career-programs/sustainability-teacher-resources/>

Pollinator Build Book and Reflection Sheet:

<https://www.comoxvalleyschools.ca/career-programs/makerspace-materials-and-teacher-resources/>

Guiding Question: How can we as professional environmental stewards support our ecosystems with pollinating flowers and plants?

Grade: 3

Big Idea:

Science- Living things are diverse, can be grouped, and interact in their ecosystem.

Careers- Everything we learn helps up to develop skills.

ADST- Technologies are tools that extend human capabilities.

First Peoples Principles:

Learning is holistic, reflective, reflexive, experiential, and relational.

Learning Path

Students will learn about local ecosystems using presenters, teacher resources, their Learning Resource Centre, or School Library Learning Commons. Students will focus on ecosystems and local flowers and plants. Students will design pollinator boxes and can place them in their school garden or around the community. The students can then teach local community groups about pollination and the importance of flowers.

Lesson Plan:

Get Ready!

Introduce Design Thinking to your students. You can use the Design Thinking hand-outs, *Cycle Image Design Thinking*, *Cycle of Design Thinking*, and the *Design Thinking Project Sheet* (Careers website).

Introduce the UN Sustainability Goals (SDG): <https://sdgs.un.org/goals> #15 and #13 relate to this so you may want to highlight these two.

You can also use the SDG flip cards- **#15 and #13**

Video to show SDG's in action,

<https://www.youtube.com/watch?v=IUjYMrGreRw>

*If you would like the students to know about their personal interests and passions around the SDG's you will want to do the "Pre-Loading" Lesson located on our website (link in the resource section).

Students will also need to learn about ecosystems: There are many resources to support this.

Consider:

Ecosystems for Kids (9:16min) :

<https://www.youtube.com/watch?v=SNF8b7KKJ2I>

Dr. Binocs (3:18min) : <https://www.youtube.com/watch?v=sKJoXdrOT70>

Your Teacher Librarian

Your District Learning Resource Centre resources

Jump In- Putting it all together!

1. The class will all pull out their copy of the *Design Thinking Project Sheet*. The teacher will need to walk the students through the project as a class, especially if this is the first time they are doing a Design Based Learning Project.
 - Step 1: Empathize- Make use of the Empathize Guide Sheet to help students consider all aspects. Who needs what?

- Step 2: Use the *Framing the Question* Sheet to help students draft their question and narrow in on their focus. The teacher can write the guiding question on the board if they are creating a class question.
- Step 3: Ideate – mind map, brainstorm...the teacher will need to support students in thinking about all aspects of the problem. Ex. Students want to grow flowers – teacher will ask “what do we need, how could we make this accessible, what flowers...” Students draw it out. Consider all that they have learned.
- Step 4: Prototype - For this step, the teacher will need to have all the building materials (listed in build book) and build book ready. This might look very different for each group depending how the teacher is running the project. If all students are making the same pollinator box, the teacher will want to go over the build steps again and write them on the board. Make sure safety has been covered and allow students to start building. Make sure to fill with soil and plant the seeds (spread them out).
- Step 5: Test - Students model, run events, test their project...Students can place their box inside in a windowsill. They need to be watered daily with a spray bottle. Once the plants are ready to go outside, around 1-2 inches tall, they can be placed outside in a space around a garden or just outside a forest where bees need to be reintroduced due to community development and growth. Slowly bringing the bees back into all spaces within community. Students can monitor the boxes – students could eat their lunch around their box and watch to see if there are any bees. Typically, you would do this in May and June.
- Step 6: Assess- Reflect. Go back ideate more and/or prototype again the next year or the following month. What do we need to reconsider? Do we need to introduce bees? Location?

Community:

2. Students could each make a poster that shows how the ecosystem works with the plants included. These could be laminated and hung by the pollinator boxes to educate community, or the students could present

their posters at an assembly and then hang them in the school hallway. Ideally, the local paper comes to the class and interviews students and places an article in the local paper so that a bigger audience is reached.