Animals & Their Habitats:
A Collaborative Scratch Project Lesson Plan

Students will work with a partner using Scratch to create a story containing an animal in its natural habitat that demonstrates their understanding of the animal's needs and behaviors.

Grade: 3rd **Subjects:** Life science, computer science, & writing	**Time/Duration**: Three 60 minute class periods	**Resources** • Storyboard video https://www.youtube.com/watch?v=NcCAzs2kCFw • Calvin & Hobbes comic http://www.orgamesmic.com/calvin-hobbes-comic-best-strip-time/ • Scratch scratch.mit.edu	**Materials** Large notecards, crayons/markers/colored pencils, Scratch accounts, computers

Connection to Standards, Learning Goals, & Success Criteria

COMPUTER SCIENCE/ TECHNOLOGY	LIFE SCIENCE	WRITING (RESEARCH)
Standards *CSTE 1B-AP-13:* Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences. *CSTE 1B-AP-16:* Take on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development. **Learning Goal & Success Criteria** Today we will collaborate with classmates to plan and develop	**Standards** *NGSS 3-LS4-3:* Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. **Learning Goal & Success Criteria** Today we will demonstrate why an organism survives in a particular habitat. I'll know I'm successful when: • I can explain an animal's needs and describe a habitat's features • I can use evidence to explain why an animal is able to survive in its habitat	**Standards** *CCSS W.3.7:* Conduct short research projects that build knowledge about a topic. *CCSS W.3.8:* Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. **Learning Goal & Success Criteria** Today we will research an animal and its habitat and take brief, organized notes. I'll know I'm successful when: • I can find books and online resources about my animal and its habitat

a Scratch program. I'll know I'm successful when:
    ● I can have productive conversations and use work time with my classmates wisely
    ● I can create a storyboard to plan our animal and habitat narrative
		● I can decide which information is important to include in my notes
		● I can organize my notes into the categories provided

Researching the Life Science

INSTRUCTIONAL NOTE: This lesson should follow inquiry based experiences where students have developed an understanding that organisms have specific needs and this affects their survival in certain habitats.

Students will use books and websites to conduct research, then take notes on their chosen animal and habitat using the graphic organizer below.

ANIMAL: _____	HABITAT: _____
Physical features	Vegetation (plants that grow)
Diet required	Other animals that live here
Shelter and other needs the animal has	Availability of air, water, and shelter
Extra info/interesting tidbits	Extra info/interesting tidbits

Collaborative Scratch Creations

INSTRUCTIONAL NOTE: Students should have some experience working with Scratch before this lesson for the most success.

USE

Display this Calvin and Hobbes comic (above) on your projector or give a copy to each student. Then have students turn and talk to a partner with the prompt, "Tell what happened in the comic in one minute. The partner with the closest birthday goes first." The second partner then has one minute to retell differently or add a detail. After discussing, set a ten minute timer and ask students to journal about how the comic strip is an effective way to convey the information. Students then explore this Scratch story, noticing how Sprites, backdrops, and dialogue is used.

Alternatively to the comic strip, this video explains storyboarding and could be used in the activity above instead. (https://www.youtube.com/watch?v=NcCAzs2kCFw)

MODIFY
Students remix the Scratch code to add at least two more panels to this Scratch story -- either a new Sprite, new background, or continued dialogue.

CREATE
Explain that a storyboard is like a comic strip that can be turned into a movie or animation! Students work in pairs to create their own storyboard on four large note cards demonstrating their chosen animal/habitat. Students should follow a similar template to the one below.

Picture of habitat and animal(s)/plant(s), include dialogue as speech bubbles	PANEL 1	PANEL 2	PANEL 3	PANEL 4
Brief description of what is seen/occurring	_____ _____ _____	_____ _____ _____	_____ _____ _____	_____ _____ _____

When finished with the plan, students begin to work in Scratch to create their own story using an animal, habitat, and dialogue to tell a story that demonstrates how a habitat provides what an animal needs. Pairs will switch roles of navigator and driver (from pair programming roles) for each new storyboard panel.

Checklist for Final Projects

- ❏ Storyboard is completed before Scratch project is started
- ❏ Backdrops represent the habitat of the animal
- ❏ Animal is represented as an animated Sprite
- ❏ Dialogue/thought bubbles are used to creatively explain at least 3 basic needs of the animal that are met by the habitat
- ❏ Partners collaborated effectively as driver/navigator to complete project