

# The Frog's Metamorphosis

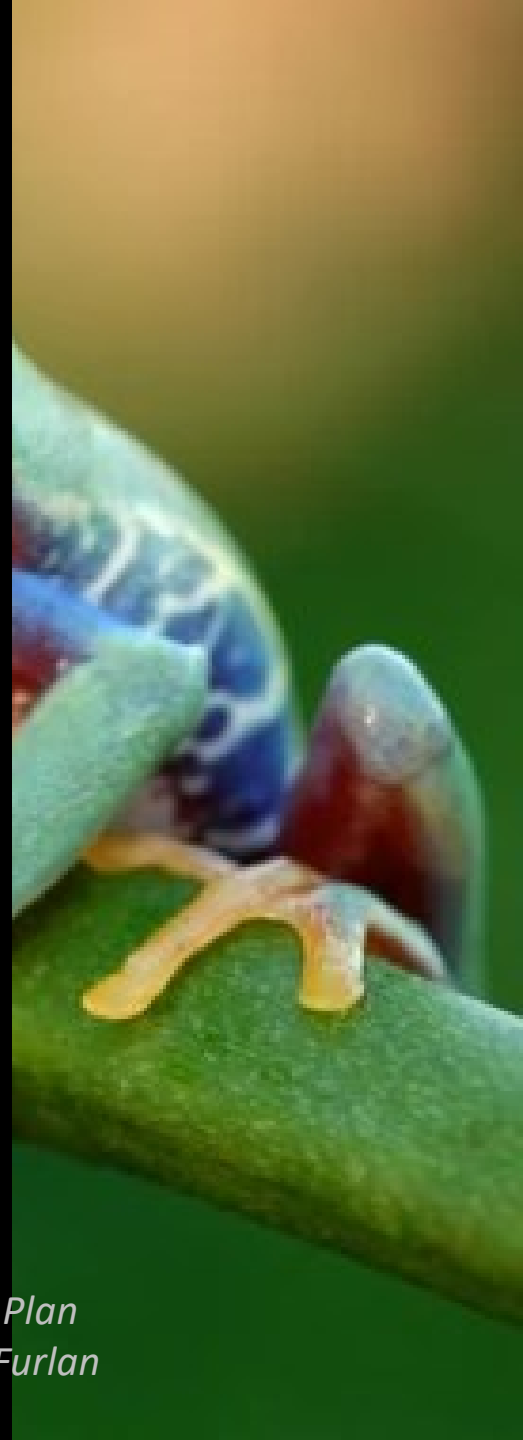
## **Project Based learning**

Use, through the learned notions, models to represent a concept of the real world

## Main objectives

In this project you can:

- Examine your knowledge about the stages of a frog's life cycle, from birth to adulthood.
- Create and program a young and later an adult frog model.
- Document the changing characteristics of the model during the different stages of a frog's life.



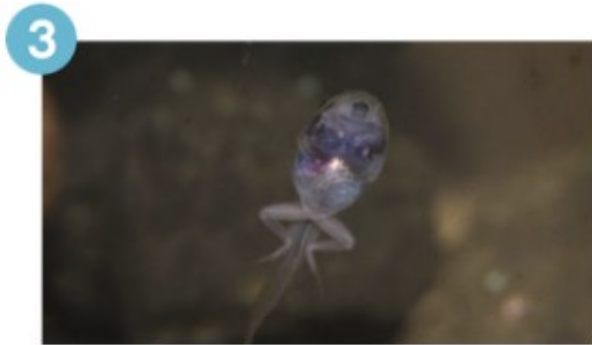


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3. Tadpoles slowly grow legs as they become young frogs (froglets).


# 1. Explore phase



- What are the different physical characteristics of a tadpole, a young frog and an adult frog?
- What are the links between changes in the physical characteristics of a frog and its habitat?
- Share your ideas with the documentation tool.



# Questions for discussion

- What physical features are changing as a frog progresses from tadpole to adult?
  - Are there any links among changes in the physical characteristics of a frog and its habitat?
  - How are life cycles of plants and animals similar?
  - What are the stages in the life of a frog?
  - Are frogs the only animal to go through metamorphosis during their life cycle?
  - Do humans undergo metamorphosis?
- 



## 2. Create phase

**Use bricks: build a model of a tadpole (larva) and then a young frog model (froglet).**

**Document the model using a picture or sketches.**

## Use the model further (optional)

Morphing from a young frog (froglet) to an adult frog. Consider the following options:

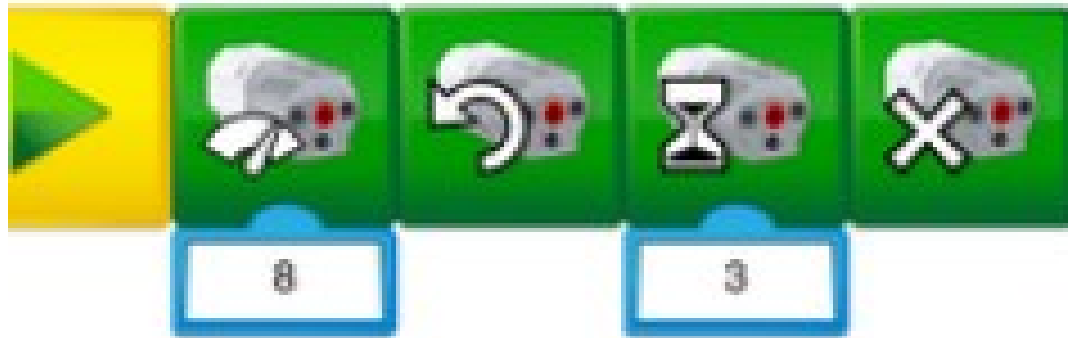
- Changing the appearance.
- Change the way it moves.
- Change behaviors to mimic an adult frog.

**Document** changes to the model and explain why this occurs in kind.

**Collaboration** suggestion  
Teams compare and share their findings



# Program the model



- **Connect the Smarthub to the device.**
- **Watch the video if you need help.**
- **change the parameters of the program so the frog moves in its habitat**



# Further use of the template (optional)

The changes to which a frog is subjected during its life cycle are conditioned by the environment in which it lives. Choose one of the following influences and use bricks to model and describe the related effect on the frog:

- habitat change.

- pollution or disease.

Document the effect of this external factor on the life of the frog.

# 3. Sharing phase

- **Complete your document**
- **Review one of the models you've built and documented. What are the limits of your model?**
- **Organize the information.**
- **Insert important text, images, images, or videos to demonstrate with specific evidence that the model represents a frog's lifecycle.**

## Presentation of the results:

- Explain in your own words the life cycle of a frog using the model you created.
- Be sure to indicate with specific examples how the model represents the life cycle of a frog.
- Share at least one limit of your model.



Self assessment



## Student self-assessment rubric

Name: \_\_\_\_\_

Class: \_\_\_\_\_

Project: \_\_\_\_\_

	Explore	Create	Share
	I documented and used my best reasoning in connection with the question or problem.	I did my best work to solve the problem or question by building and programming my model and making changes when needed.	I documented important ideas and evidence throughout my project and gave my very best when presenting to others.
1			
2			
3			
4			

### Project reflection

One thing I did really well was:

\_\_\_\_\_

One thing I want to improve upon for next time is:

\_\_\_\_\_

# MY ROBOT GARDEN

5a Bannia

a.s. 2020 - 21

