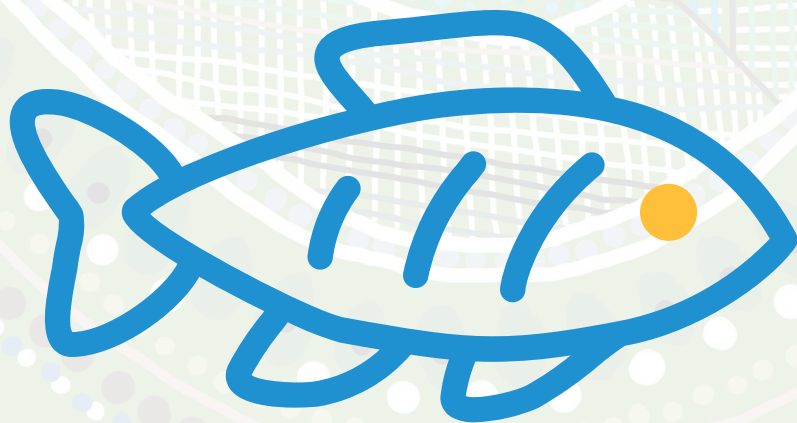


Spot the Difference

Classroom Activity



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Indigenous artwork by Mim Cole
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Spot the difference

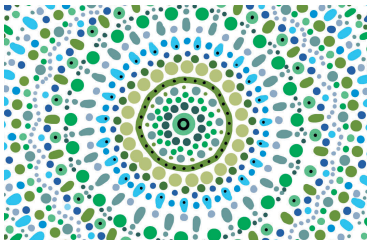
Guided Inquiry

This activity is designed to share and honour knowledge and skills with students. This activity provides students an introduction to genetics, and how genetics can be used to think about ways to solve problems, through scientific processes.

During the activity, think about:

1. What genetic differences in living things look like?
2. Why do genetic differences matter and who do they matter to?
3. What purpose is served by the genetic differences?

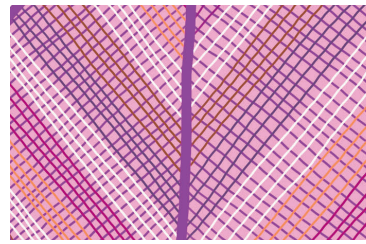
Learning intentions



In this activity, students will:

- Predict, observe and practice skills by watching, then doing. Sharing between different groups such as teachers and other students.
- Build skills and engagement in observational science through guided inquiry.
- Use STEM skills to connect concepts together to help solve problems.

Vocabulary



Basic:

Differences
Observations
Swordtail
Colour
Shape

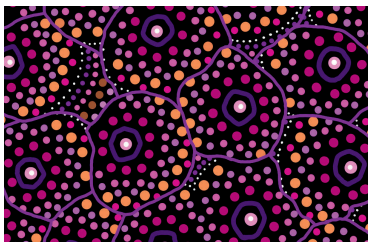
Advanced:

Phenotype
Genotype
Genetics

Local phrases:

If you come across any words from your local area, share them with your class.

Resources



- A teacher and/or facilitator
- Student resource: Spot the difference 1 (printed or projected)
- Student resource: Spot the difference 2 (printed or projected)
- Student resource: Spot the difference 3 (printed or projected)

Spot the difference

POE Strategy

Ask these guiding questions:

Use these questions to drive discussion during the activity:



Predict

What are the ten differences between the two images of cartoon fish on Spot the difference 1?

What are the scientific skills that you have practiced to spot the differences?



Observe

What are the three differences between the two images of the Sheepshead Swordtail fish on Spot the difference 2?

What are the main differences?
What do we mean by Phenotype and Genotype?
What are some advantages or disadvantages of those differences?

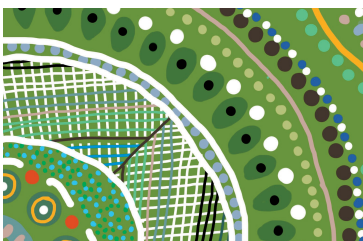


Explain

What are the differences between some specimens of living things you can collect? Use Spot the difference 3.

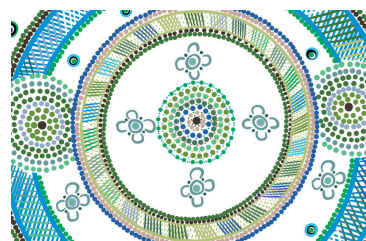
What are the genetic differences?
How can these differences be useful for the organism?

Differentiations



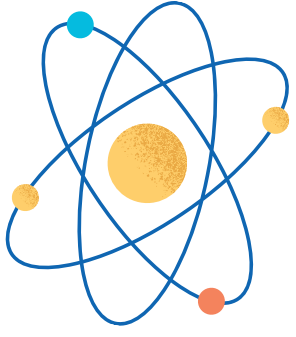
Try some different levels of spot the difference activities.

Extensions



Encourage students to do their own research into genetics and biology, what can they find out?

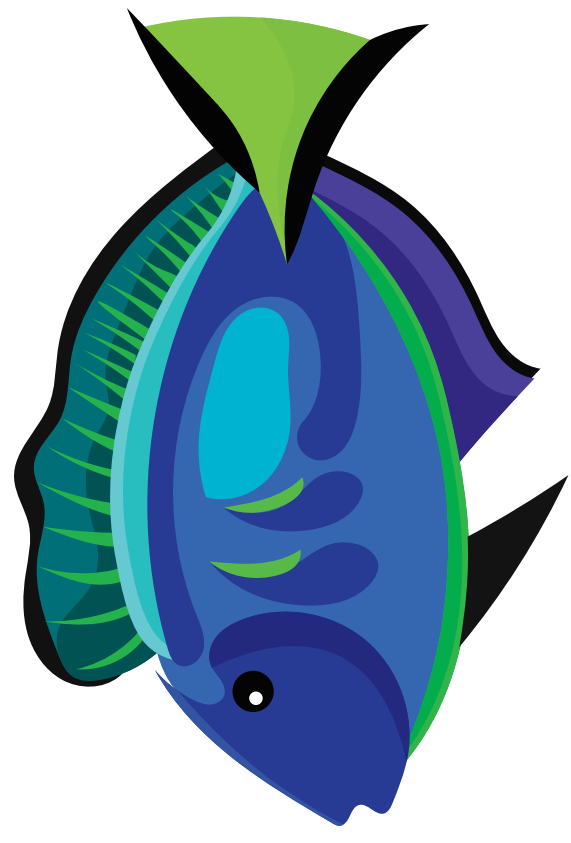
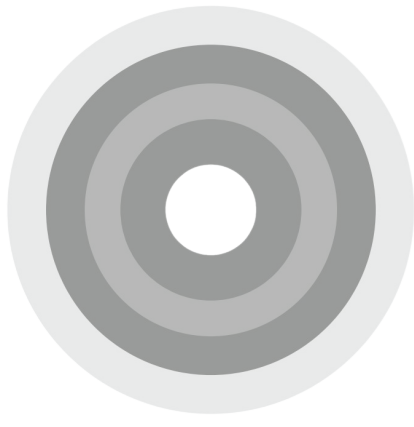
Once you have made some observations about genetic differences in fish, take a look at some other living things and run through the same activity. What genetic differences can you spot in other living things?

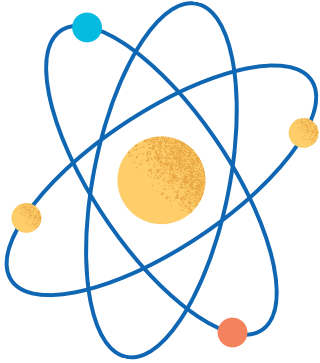


DEADLY SCIENCE

Spot the difference 1

Spot the 10 differences in the two images below.
Think about:
• What skills you are using?
• How would this activity be useful to a scientist?





DEADLY SCIENCE

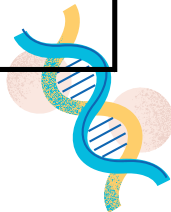
Spot the difference 2

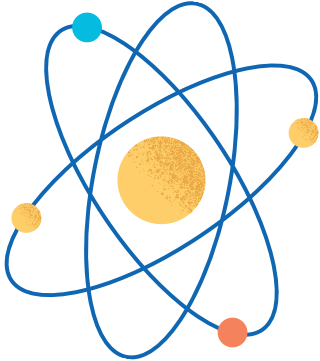
Apart from colour and fin shape, spot three differences (phenotypes) in the two *Xiphophorus birchmanni* (Sheepshead Swordtail) below.

List the advantages or disadvantages for these differences.



Phenotype	Advantage	Disadvantage





DEADLY SCIENCE

Spot the difference 3

Find two things in your local area that are the same thing but look different (leaves, lizards, gabbies, flowers...up to you!).

Draw or stick them below.

What are three phenotypes of your chosen items?

List the advantages or disadvantages of these differences?

Phenotype	Advantage	Disadvantage

