

## *INTRODUCTION:*

Nature is not just red in tooth and claw - it's also green in leaf and branch, brown in mud and straw, and, most importantly, unbelievably sneaky in skin, fur and chitin. Snakes can look just like the ground their prey walks on, while inoffensive bugs can look like aggressive, poisonous wasps. Leaf-eating Katydid's can munch undisturbed by insect-eating birds by looking just like the leaves they are munching on. Over the last few hundred million years, many forms of animal life have evolved ways to trick their prey, their predators and each other into paying them no attention.

The most common form of camouflage is simple colour schemes that blend into the background - lions are the same colour as the dried grass they stalk through. Slightly stranger are the arrangements of blocks of contrasting colours in the coats of tigers, breaking up the outline of a tiger when seen against a forest background of dark shadows and bright patches<sup>1</sup>. Mimicry goes a step further - the animal actually looks an awful lot like something else; sticks, leaves, rocks, patches of gravel, tree bark... Even more impressive is Batesian mimicry, where an animal looks like a different animal - usually this involves some innocuous creature looking like something dangerous; a 'sheep in wolf's clothing'.

## *OBJECTIVES:*

Your students will develop an appreciation of different types of animal camouflage - best used as part of a larger unit on Adaptations.

## *MATERIALS:*

- Projector/smart board
- Internet Connection
- Optional:
  - Pencils
  - Copies of the Camouflage Worksheet (pages 4 and 5)

## *SAFETY INFORMATION*

- There are no safety concerns specific to the activity.

---

<sup>1</sup> On a similar note, there is a common myth that zebra's vertical black and white stripes disguise them against the vertical yellow and green grass because their main predator, the lion, is colour-blind. Actually, a zebra stands out in black and white vision because its stripes are so much thicker and bolder than anything found in the grass. Secondly, lions aren't actually colour-blind - they have dichromatic vision (vision made up of two colours, as opposed to human vision which is trichromatic - made up of three colours). What zebras are really camouflaged against is each other - stripes come in useful when you live in a herd covered in stripes, making it hard for a predator to single you out.

## PREPARATION:

Before the activity begins, download the PowerPoint file 'Animal Camouflage and Mimicry'. There is a link to the file in MSE Update 4 on our website or you can copy and paste the following into your browser:

[http://www.mobilescienceeducation.com.au/newsletter/images/Animal\\_Camouflage\\_and\\_Mimicry.pps](http://www.mobilescienceeducation.com.au/newsletter/images/Animal_Camouflage_and_Mimicry.pps)

If you are using the Camouflage worksheet, you will also need enough copies to go around.

## WHAT TO DO:

This is really up to you - the Camouflage and Mimicry PowerPoint is resource for you to use as you see fit. Here are some suggestions:

- Use the slide show as a quick quiz and interest-grabber to introduce the subject of animal adaptations
- Use the slide show as a quiz part way through the topic - have the students name the types of camouflage they see
- If you want to invest a little more time in the topic, use the slide show along with the Camouflage Worksheet as outlined below

## THE CAMOUFLAGE WORKSHEET:

Firstly, explain the handout to the students. For each numbered picture around the room there is an empty box and two simple questions:

“Where is the hidden animal in this picture?”

“What do you think the animal is?”

There is room for the students to write their answers beneath each question. The empty box beside the 2 questions is the same shape as the image on the screen. If a student thinks she sees an animal in the picture, she needs to sketch in the box approximately where the animal is and what shape it is. For example, if you see a gorilla in the bottom right corner of the photo, you need to draw the gorilla in the bottom right corner of the box - don't fill the whole box with the picture!

This is to guard against something called **Pareidolia**. “Pareidolia is a psychological phenomenon involving a vague and random stimulus (often an image or sound) being perceived as significant. Some common examples are seeing images of animals or faces in clouds, the man in the moon, and hearing hidden messages on records played in reverse.” Thank you, Wikipedia.



*This man's brain tells him that John Lennon is on his wall...*

In other words, pareidolia is a result of our overactive pattern-seeking brains making meaningful, recognisable information out of randomness. It is very easy, when looking at the camouflage pictures, to convince yourself that you can see an animal when what you are really looking at is a strangely shaped twig. When these pictures were tested on children, the 'animals' the children saw were often either part of the real animal plus something from the background, or just invented entirely out of the background. When the students draw where they saw the animal they can later check their original impressions against the real thing when you put up the answer.

Give the students some time to check out each picture and record their answers. You may want to take a quick poll of the students at each picture - perhaps get a score out of 5 for how well camouflaged the animal is.

### **SLIDE EXPLANATIONS:**

Slide 1 - an example of simple camouflage. The frog's colouring and markings help it blend into the scenery.

Slide 2 - another, more effective, example of camouflage. The snake's colouring blends into the scenery and the pattern of markings in the scales help to break up the outline of the snake.

Slide 3 - a beautiful example of mimicry - just one dead leaf among many.

Slide 4 - an example of camouflage using texture, as well as colour. The effect borders on mimicry since the fish looks so much like something else - a sponge, or coral outcrop.

Slide 5 - another effective example of camouflage. The snake's colouring matches the forest's carpet of fallen leaves, the pattern of markings in the scales breaks up the outline of the snake, and the snake could be equally hard to spot in amongst branches rather than leaves.

Slide 6 - a highly detailed example of mimicry that would work best when seen from above - the viewpoint of the insect's usual predator, birds.

Slide 7 - another borderline between camouflage and mimicry. The cuttlefish can alter its colouring to blend into a variety of backgrounds, its texture matches the environment and there is a behavioural component - curling up the tentacles.

Slide 8 - many octopi are excellent mimics, changing colour to match their surroundings and altering their surface texture and shape to match nearby objects.

Slide 9 - an example of Batesian mimicry hidden in plain sight; a baby cricket looks similar enough to the ants around it that they leave it alone. The mimicry actually goes beyond the visual - the cricket nymph even smells the same to the other ants since it hatched underground in the ant nest. Why? Just before hatching, the cricket egg looks an awful lot like a baby snail, one of the ants' food sources (pre-natal Batesian mimicry?). The ants carry the 'snail' into the nest and place it in one of the larders, where it quickly hatches safe from the keen eyes of insectivorous birds.

#### **Curriculum Links: Primary Connections:**

Units: Growing and Changing; Schoolyard Safari; Feather's, Fur or Scales?; Adaptations;

#### **Curriculum Links: National Curriculum:**

**SU:** Biological Yr 1 - 10

**SHE:** Nature and Dev. F - Yr 4



**Lee Harrison, B.Sc, Dip.Ed**  
mobile: 0430 588 757 phone/fax: (08) 8395 9586  
email: [info@mobilescienceeducation.com.au](mailto:info@mobilescienceeducation.com.au)  
mail: PO Box 550, Ingle Farm, SA 5090  
web: [www.mobilescienceeducation.com.au](http://www.mobilescienceeducation.com.au)

# ANIMAL CAMOUFLAGE + MIMICRY

Take a close look at the numbered slides as they appear.  
Use a pencil to fill out the answers for each photograph.  
Look carefully - nature can be tricky!

*Draw where on the photo you think  
an animal is.*

## Photo 1

*Where is the hidden animal in this picture?*

---

*What do you think it is?*

---

## Photo 2

*Where is the hidden animal in this picture?*

---

*What do you think it is?*

---

## Photo 3

*Where is the hidden animal in this picture?*

---

*What do you think it is?*

---

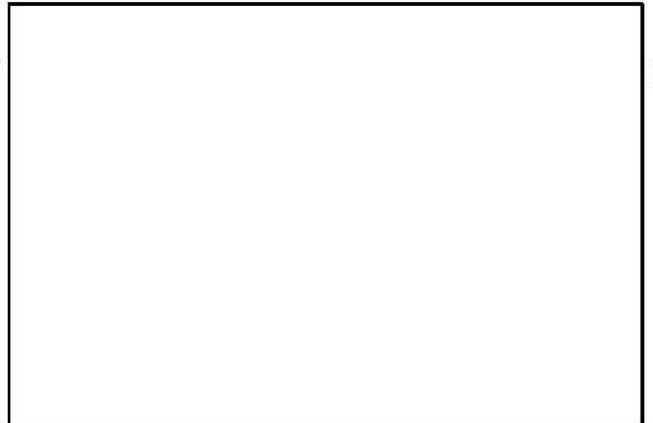
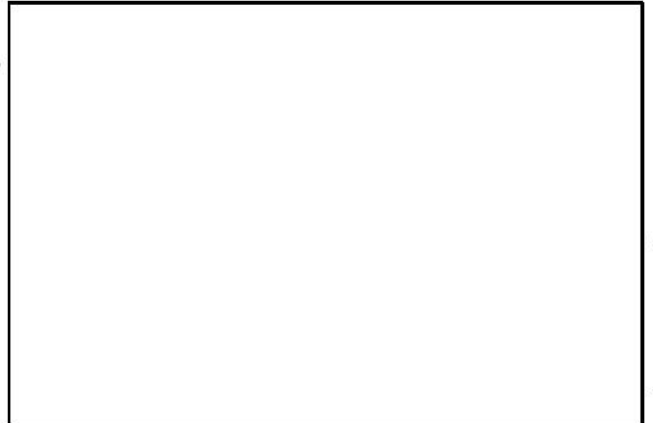
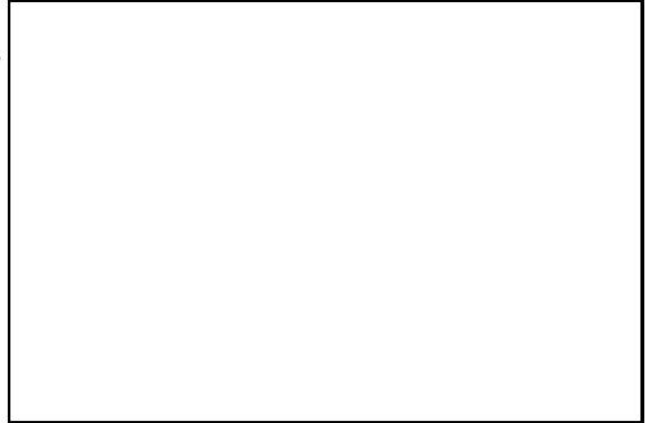
## Photo 4

*Where is the hidden animal in this picture?*

---

*What do you think it is?*

---



**Photo 5**

*Where is the hidden animal in this picture?*

---

*What do you think it is?*

---

**Photo 6**

*Where is the hidden animal in this picture?*

---

*What do you think it is?*

---

**Photo 7**

*Where is the hidden animal in this picture?*

---

*What do you think it is?*

---

**Photo 8**

*Where is the hidden animal in this picture?*

---

*What do you think it is?*

---

**Photo 9**

*Where is the hidden animal in this picture?*

---

*What do you think it is?*

---

