

## Investigation into variation in organisms

### Introduction

Snails of two closely related species of *Cepaea* are common in woodland and grassland in Britain. They show a pattern of variation known as polymorphism. This means that there are several different 'types'. The shell may be either yellow or pink/brown, and it may have dark stripes or be plain.

The four types of the snails are as follows:

- Pink/brown, plain
- Yellow, plain
- Pink/brown, striped
- Yellow striped



In this investigation photographs of snails from each area, woodland and grassland will be categorised and counted to determine which variations of snails are most common in each area.

### Apparatus

Images of snails (attached)

### Method

1. Arrange the photographs of the woodland snails face down and randomly select 50.
2. Categorise the snails selected into one of the 4 different variants and count the number of each.
3. Repeat steps 1- 2 for the grassland snails.

### Analysis

1. Draw a bar chart of your results.
2. Analyse your results to reach a conclusion on the effect of habitat on the variation of snails.

## Risk Assessment

Hazard	Risk	Control measure
No significant risks are associated with this investigation.		

## Teacher/Technician notes

The photographs of snails need to be copied in colour and in sufficient quantities so that each group is able to collect 50 snails from each habitat, woodland and grassland.

Students should devise a tally chart to record data collected and calculation of the % of each type of snail should also be encouraged.

Snail Type	Woodland		Grassland	
	Numbers	%	Numbers	%
Plain yellow				
Striped yellow				
Plain pink				
Striped pink				

Further discussions could take place on evaluating the difference between this investigation and the reality of sampling snails in their environment, including the concept of sample size and the possible implications of some snails having better camouflage than others.

## Working scientifically skills covered

### 2. Experimental skills and strategies

Recognise when to apply a knowledge of sampling techniques to ensure any samples collected are representative

Make and record observations and measurements using a range of apparatus and methods.

### 3. Analysis and Evaluation

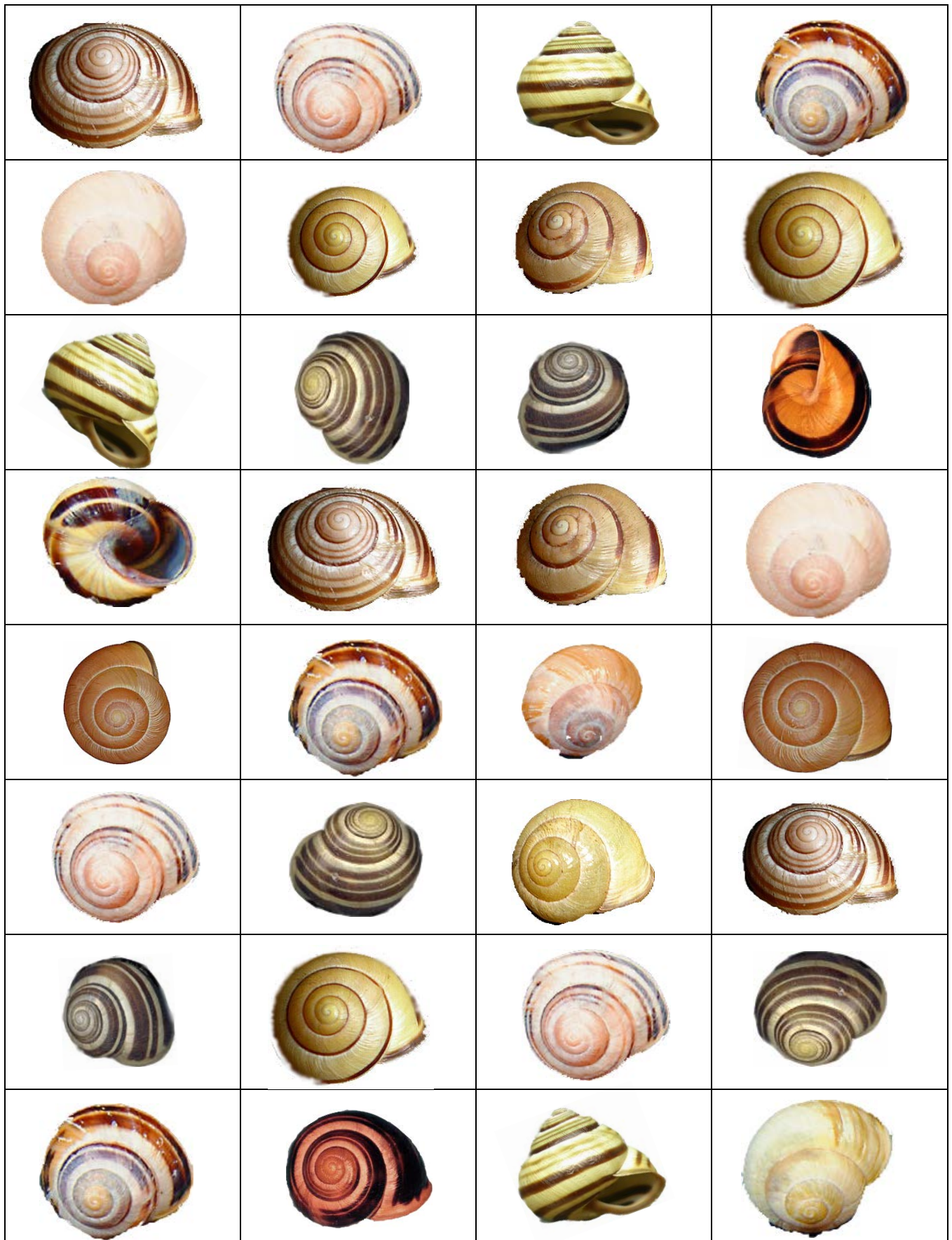
Presenting observations and other data using appropriate methods

Translating data from one form to another.

Carrying out and representing mathematical analysis.

Interpreting observations and other data, including patterns and trends, making inferences and drawing conclusions

# Woodland snails 1

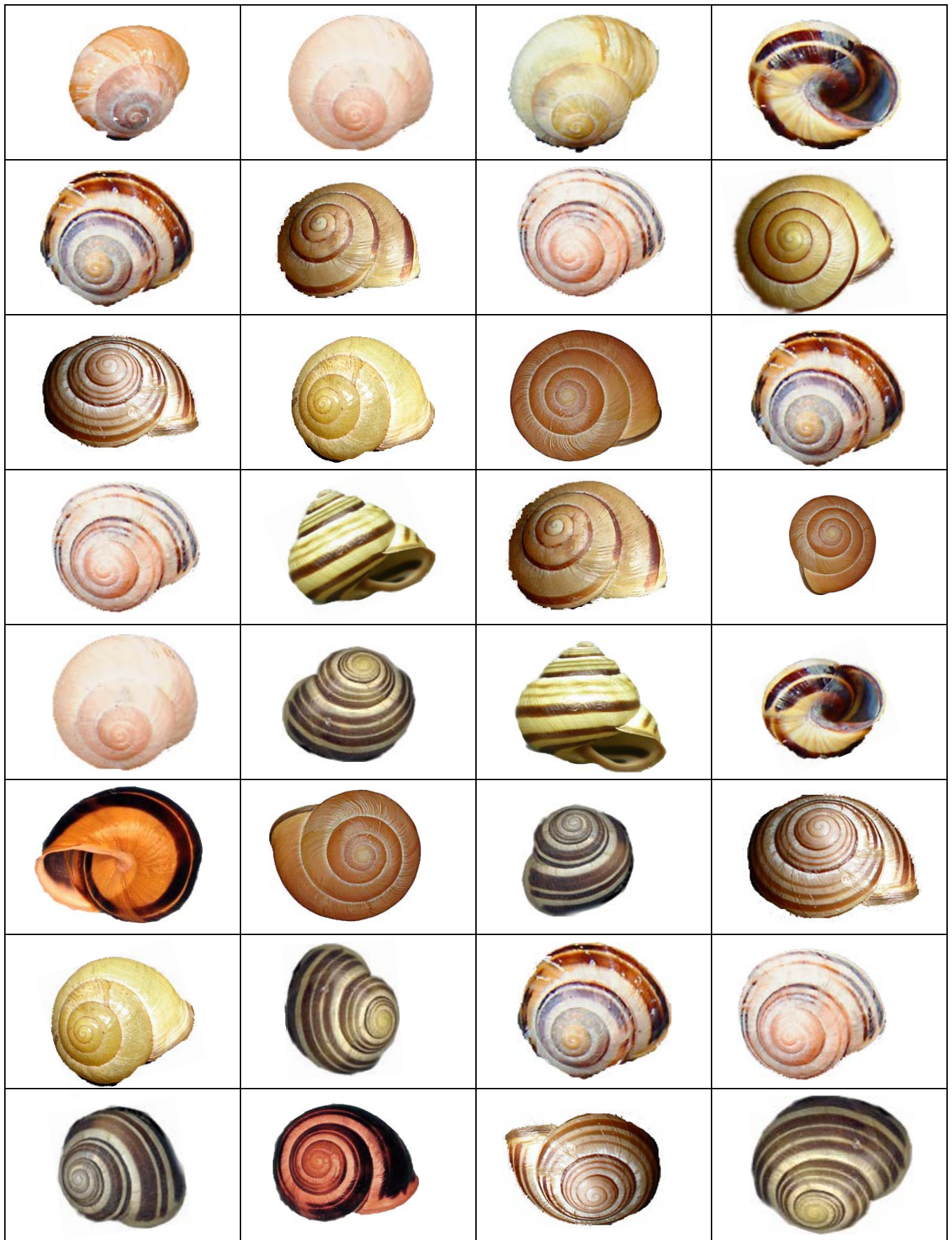




## Woodland snails 2

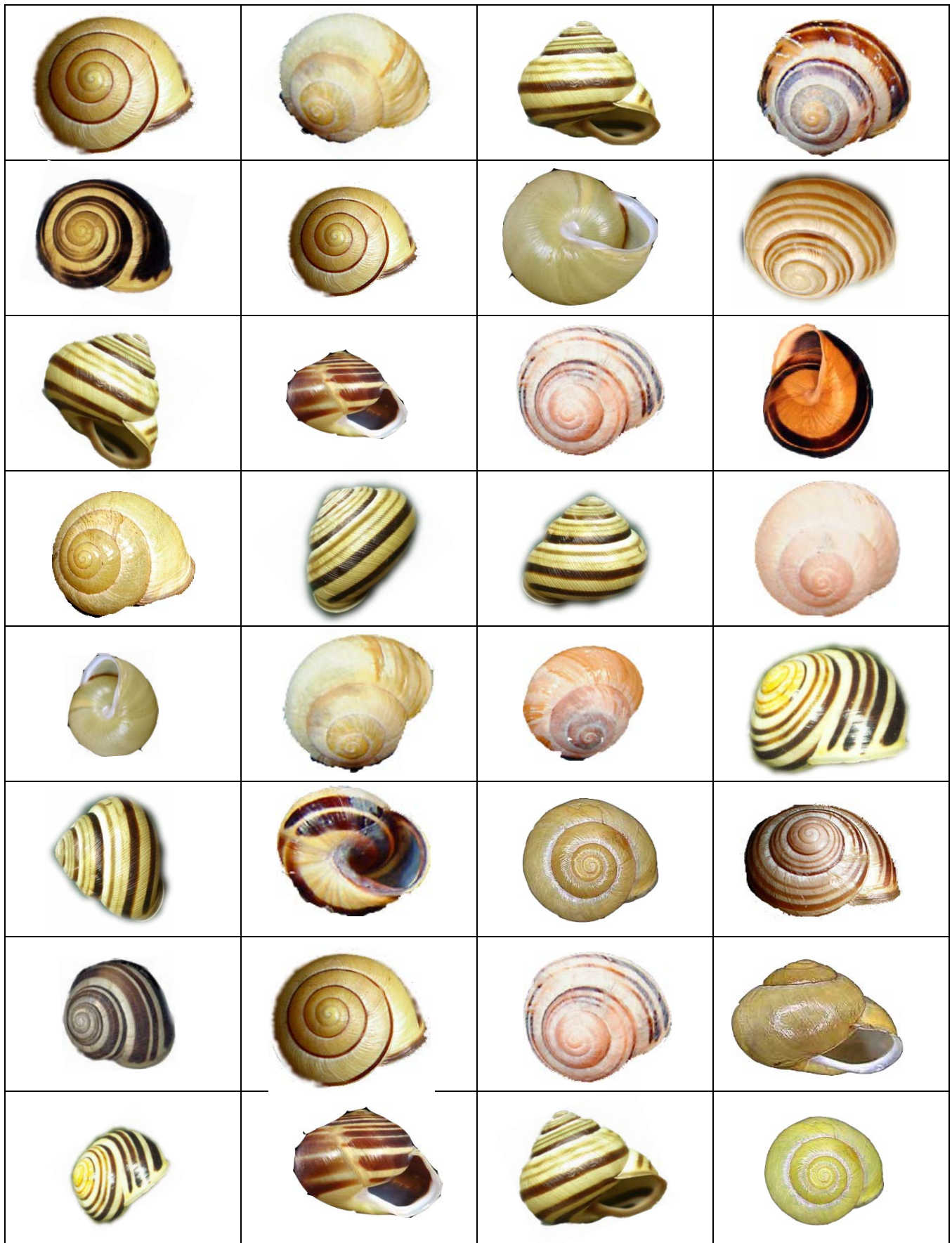


# Woodland snails 3

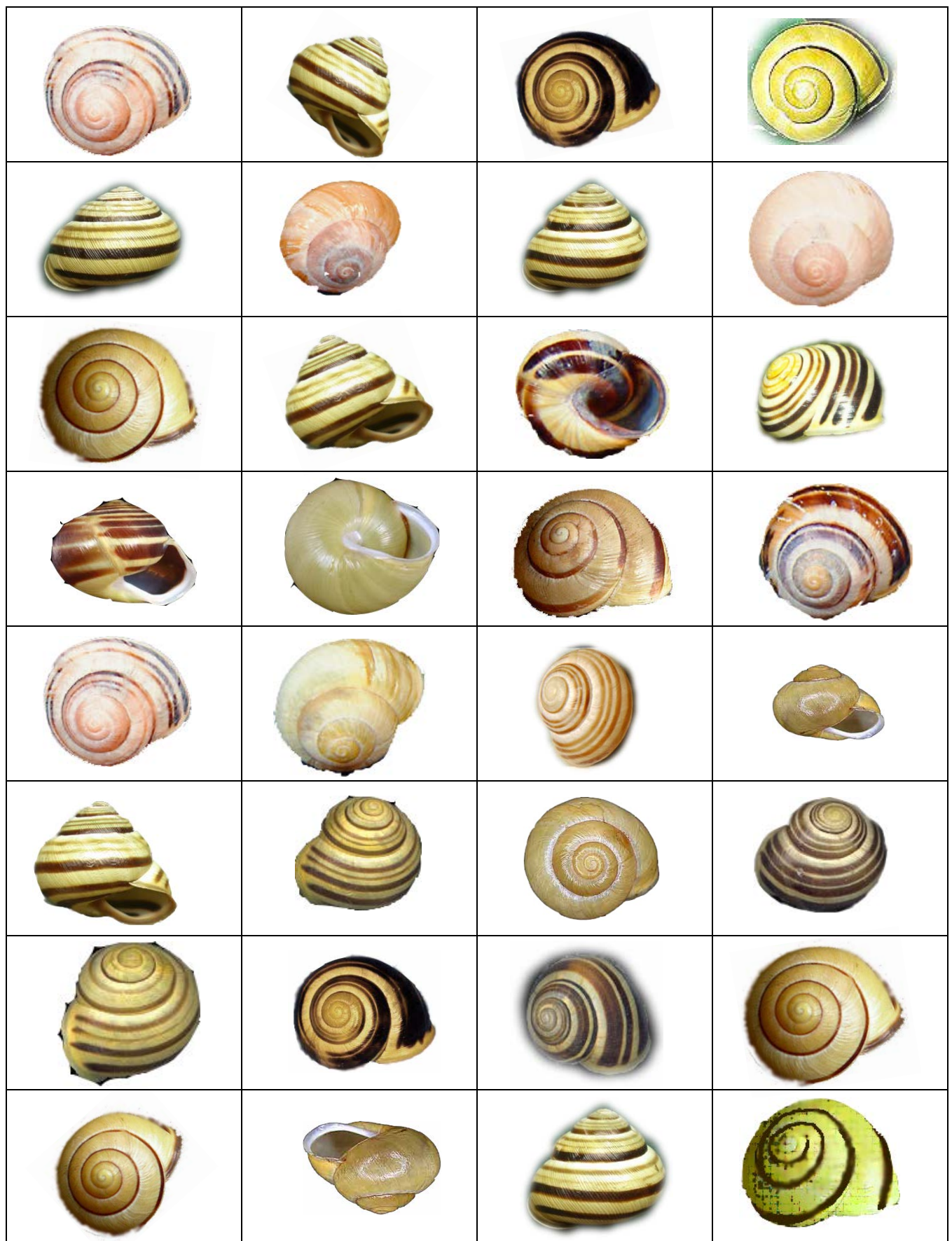




# Grassland snails 1



## Grassland snails 2





# Grassland snails 3

