What is a Dichotomous Key?

- A tool used to identify organisms based on observable characteristics

- "Dichotomous" means divided into 2 parts
  - o Always presents 2 distinct choices at each step

- Useful with limited background knowledge of species and lack of access to other identification technologies

Using a Dichotomous Key

Invertebrates

Does it have a hard shell?

Yes — No

Does it have a pair of claws?

Yes — No

Crab

Nautilus

Does it have tentacles?

Yes — No

Is its body transparent?

Yes — No

Sea Jelly

Octopus

Sea Star

Complete the Dichotomous Key

You will need to:

- Refer to your *Complete the Dichotomous Key* worksheet

- Gather in groups of 4

- Use the following 5 animals (in next slide) to complete the dichotomous key

- Discuss with your group mates and complete your worksheets!

Complete the Dichotomous Key

Using these 5 animals, complete the partially-constructed dichotomous key in your worksheet.

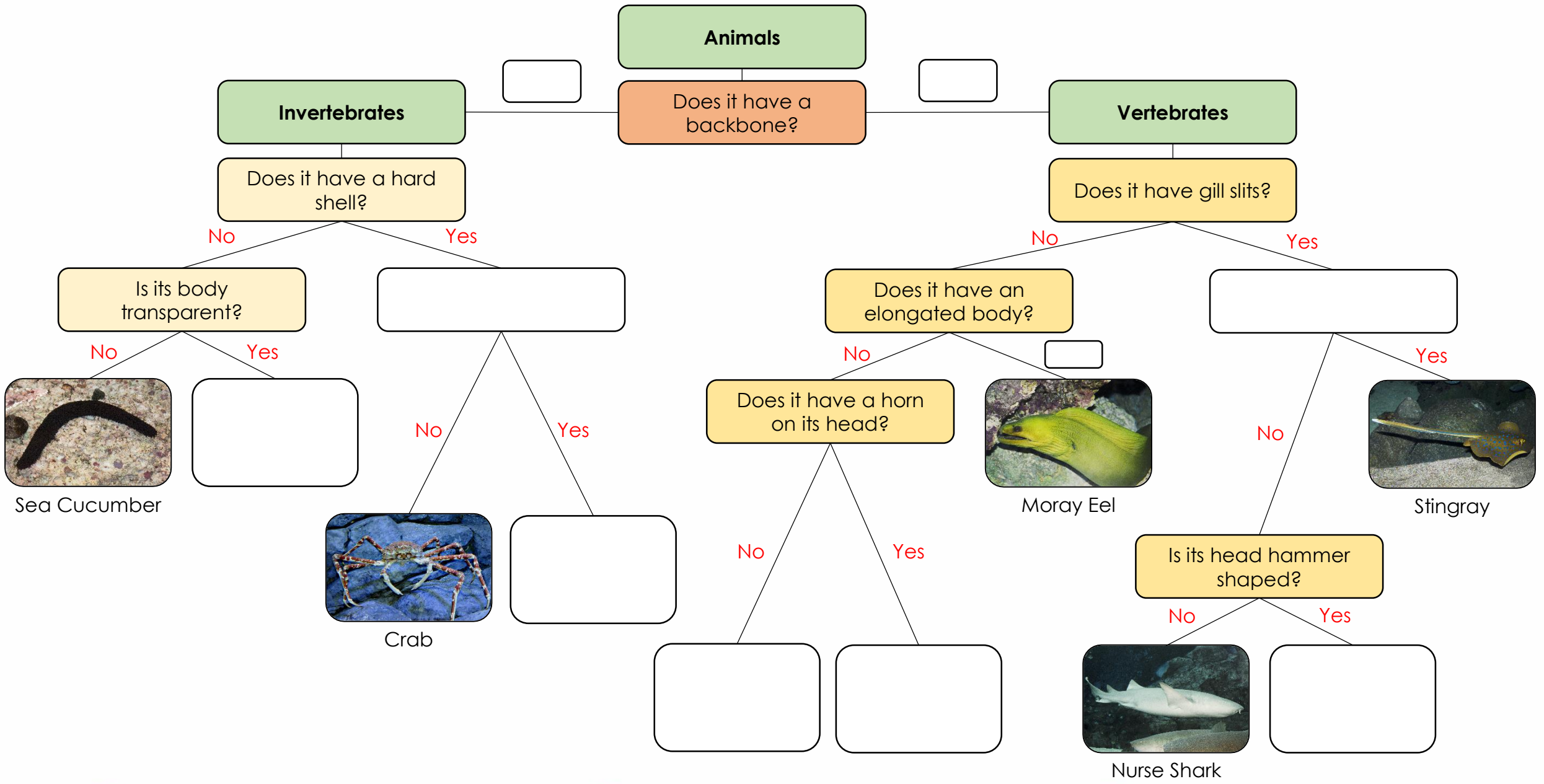
Sea Jelly

Unicornfish

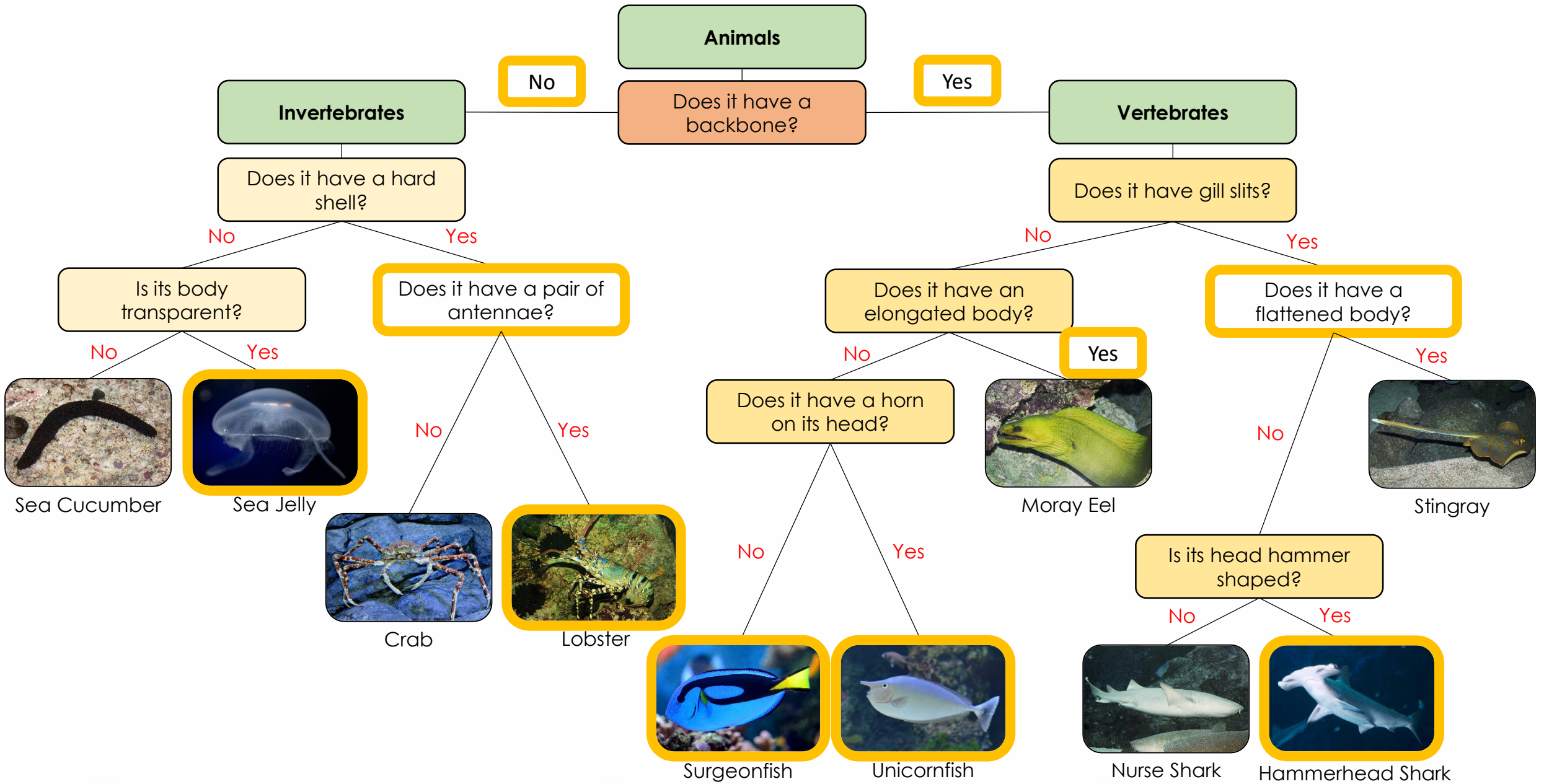Surgeonfish

Lobster

Hammerhead Shark

Animals

Does it have a backbone?

Invertebrates

Vertebrates

Does it have a hard shell?

Does it have gill slits?

No — Yes

No — Yes

Is its body transparent?

Does it have an elongated body?

No — Yes

No — Yes

Sea Cucumber

No — Yes

Does it have a horn on its head?

Moray Eel

No — Yes

Crab

Stingray

No — Yes

No

Is its head hammer shaped?

No — Yes

Nurse Shark

Completed your dichotomous key?

Let's check out some suggested answers!

Animals

Does it have a backbone?

No — **Invertebrates**

Yes — **Vertebrates**

Invertebrates

Does it have a hard shell?

No — Is its body transparent?
- No — Sea Cucumber
- Yes — Sea Jelly

Yes — Does it have a pair of antennae?
- No — Crab
- Yes — Lobster

Vertebrates

Does it have gill slits?

No — Does it have an elongated body?
- No — Does it have a horn on its head?
  - No — Surgeonfish
  - Yes — Unicornfish
- Yes — Moray Eel

Yes — Does it have a flattened body?
- No — Is its head hammer shaped?
  - No — Nurse Shark
  - Yes — Hammerhead Shark
- Yes — Stingray

Construct Your Own Dichotomous Key

A friendly alien from our neighbouring planet will be visiting Earth for the first time!

As such, students are enlisted to help create a dichotomous key with 15 different marine animals for our alien friend to easily identify them during his visit here!

Construct Your Own Dichotomous Key

You will need to:

- Gather in groups of 4

- Collect flipchart papers and markers from your teacher

- Construct a dichotomous key with your group mates using all 15 animals shown in the next slide

Construct your dichotomous key using these animals!

Bumphead Parrotfish

Sand Tiger Shark

Manta Ray

Eagle Ray

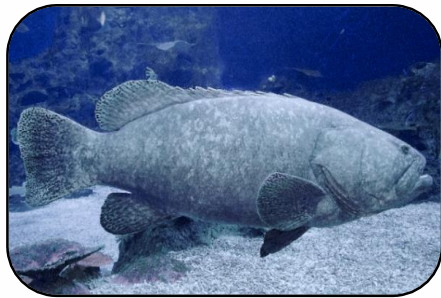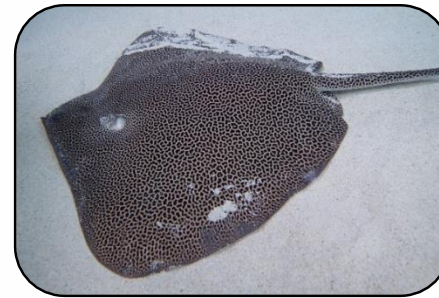Seahorse

Coral

Sea Anemone
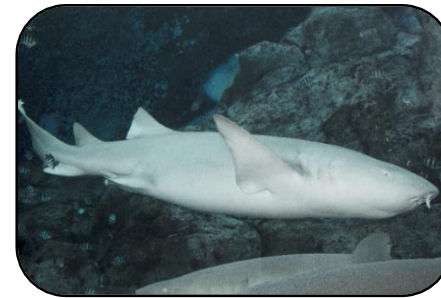
Lionfish

Clownfish

Sea Star

Sea Dragon

Grouper

Stingray

Nurse Shark

Poison Arrow Frog

Construct Your Own Dichotomous Key

Tips:

- List and organise observable characteristics, starting with general characteristics

- Use more specific questions and traits as you progress further

- At each branching point, use questions that only lead to a **Yes** or **No**

- Focus on one characteristic at a time

Constructed your dichotomous key?

Exchange your dichotomous key with
your neighbouring group and test it out!