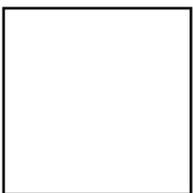
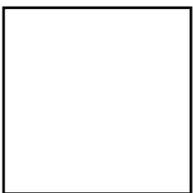
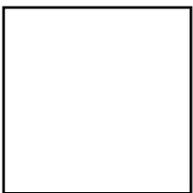
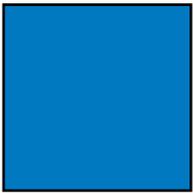
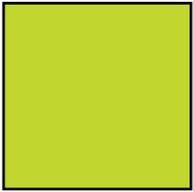
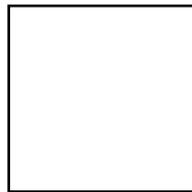
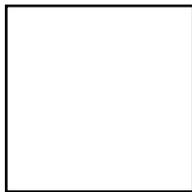
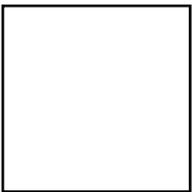
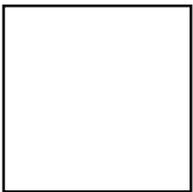


Can you copy the pattern all the way around?



L I

Lionfish



THE AQUARIUM OF WESTERN AUSTRALIA

SEA FOR YOURSELF

Turn these colourful
blobs into sea creatures

Kindy



THE AQUARIUM OF WESTERN AUSTRALIA

SEA FOR YOURSELF

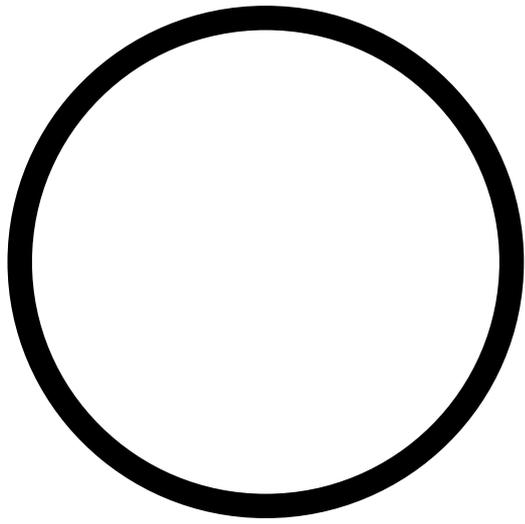


Stick on some tentacles to turn this shape into a jellyfish

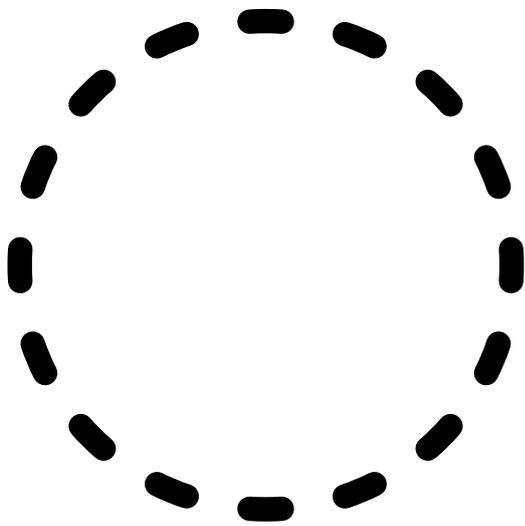


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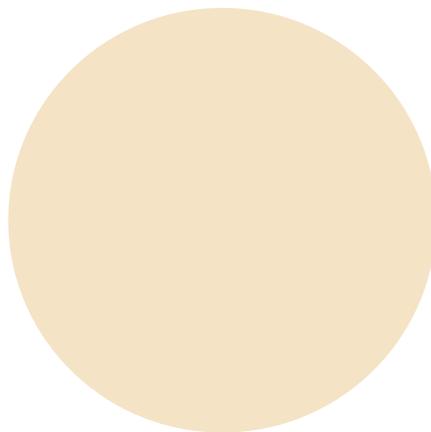
SEA FOR YOURSELF



circle



Can you turn a circle into a fish?



THE AQUARIUM OF WESTERN AUSTRALIA

SEA FOR YOURSELF

Kindy



When you pick up a starfish it sucks its feet back inside. They are kept safe along these grooves.

Starfish

1. Starfish have a tiny mouth (so small it really wouldn't fit much food in) so to eat a starfish brings its stomach out of its mouth and onto its food!! It sucks it up like sponge and then slurps its stomach back in.
2. Most starfish have 5 arms but some have 11 and one has 27!
3. Starfish can regrow their arms! Or even the rest of their body
4. Starfish don't have bones but they do have round bumps - they belong to a group of animals known as the spiky skin gang
5. Under their arms starfish have hundreds and hundreds of tiny feet, and a nose right at the end. The feet can be round to help stick to rocks or pointy like shovels to help them dig their way through the sand.

Art Activity: Add secret circles to your starfish

Print out the starfish activity sheet.

Use a white wax candle to draw circles all over the starfish.

Does your starfish feel bumpy?

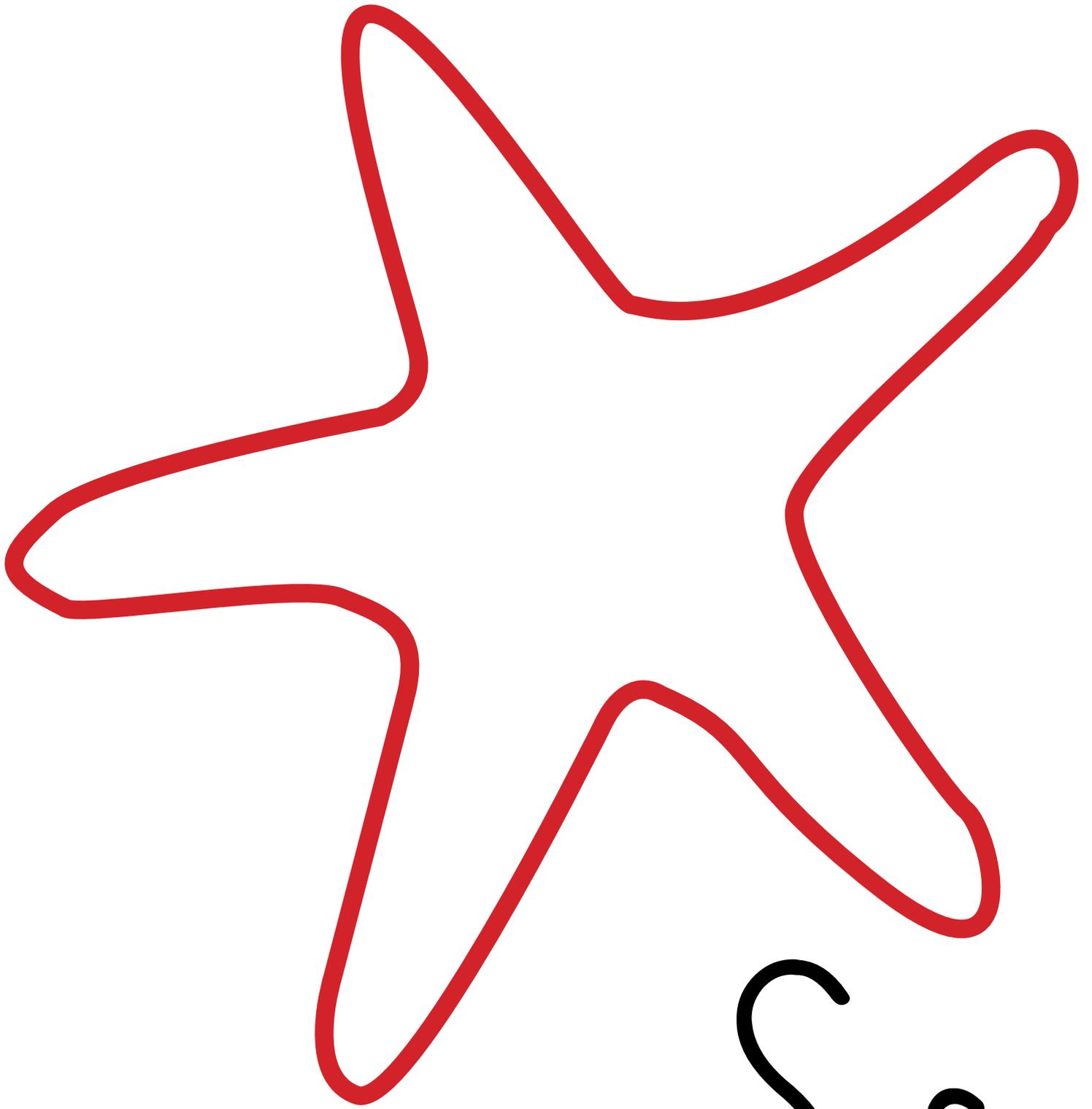
Paint your starfish with watercolour paint. What does it reveal?

Some starfish feel soft but under their skin they have round bumps to make sure they are not too floppy!



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SEA FOR YOURSELF



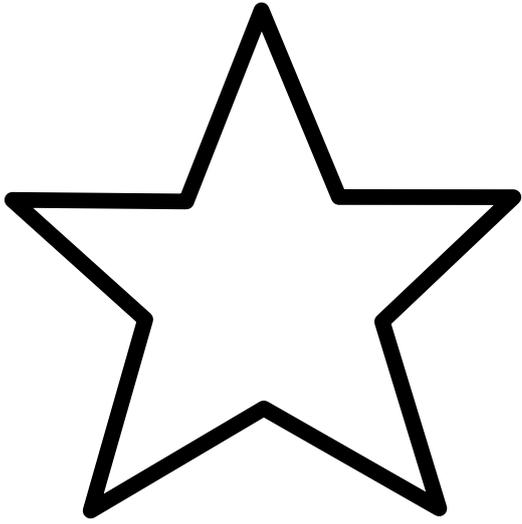
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Starfish

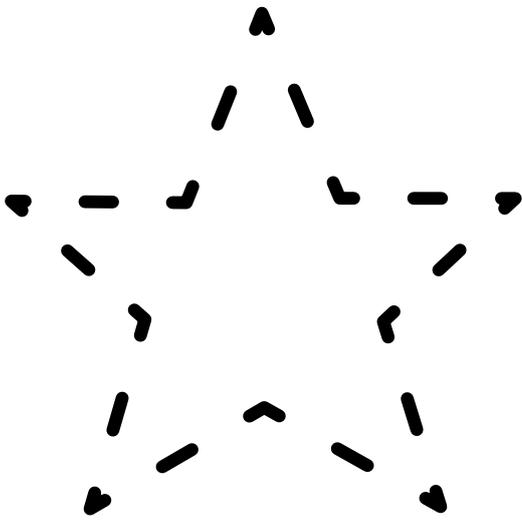


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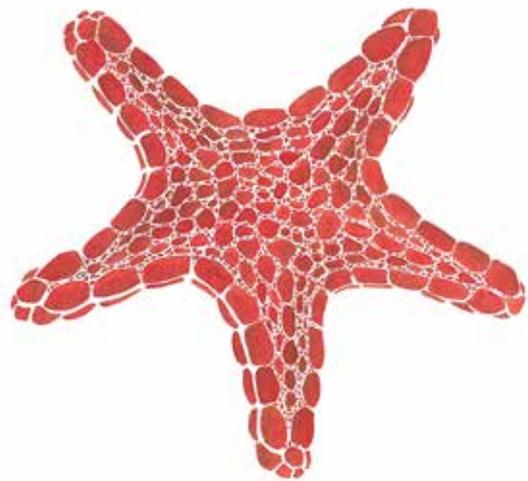
SEA FOR YOURSELF



star



*How many arms does a
starfish have?*

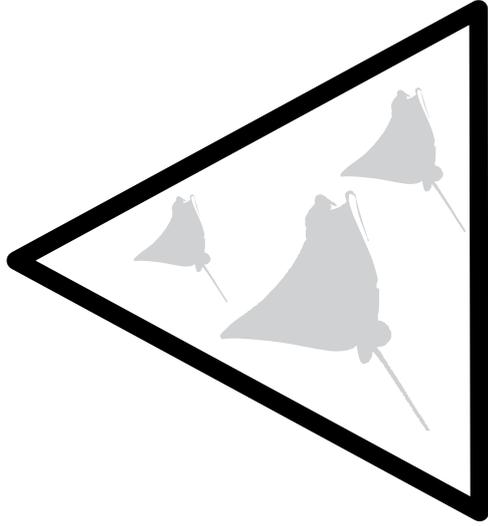


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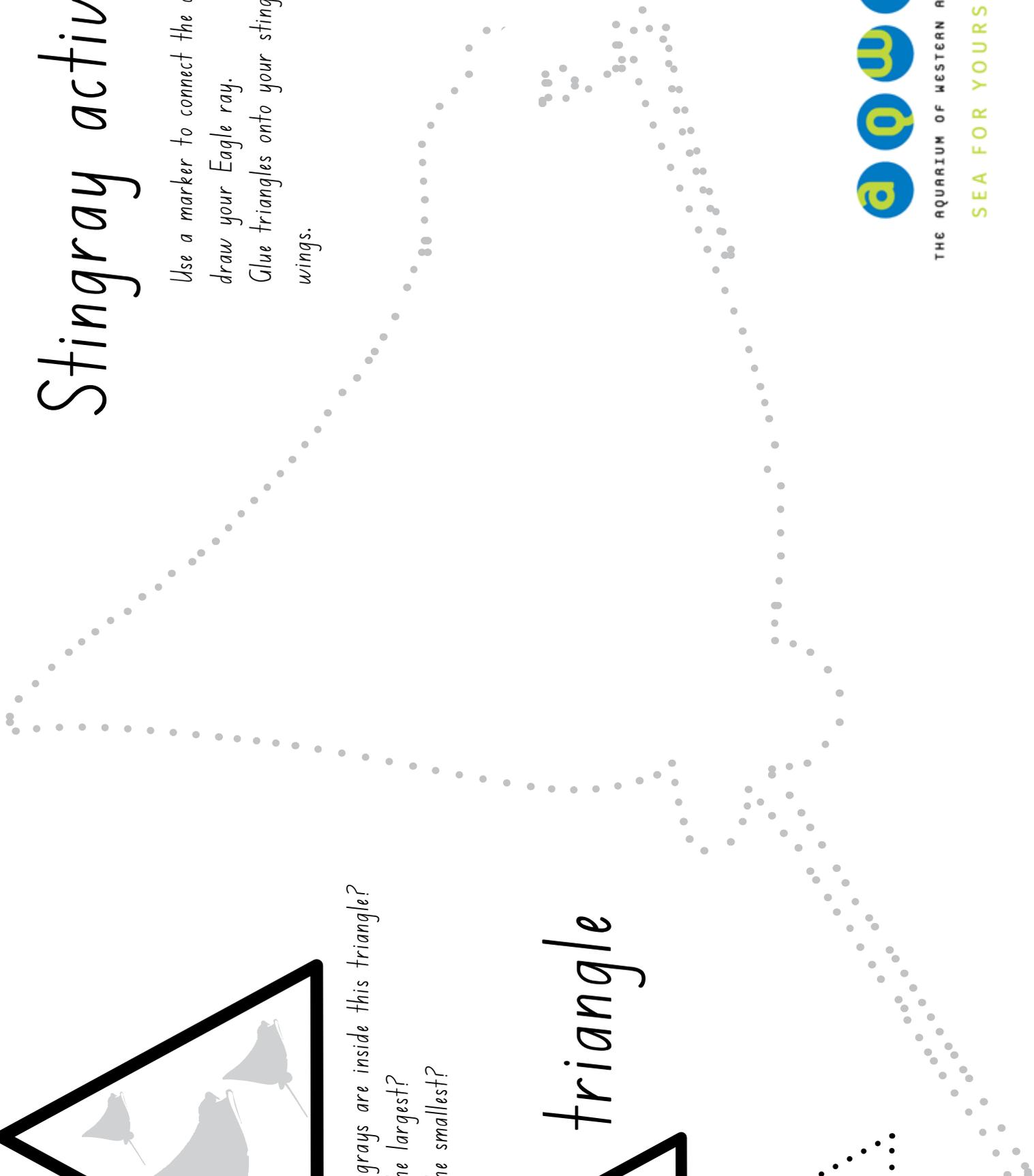
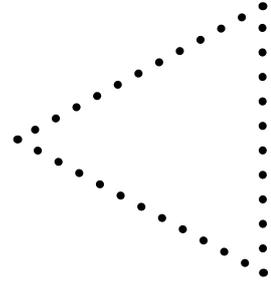
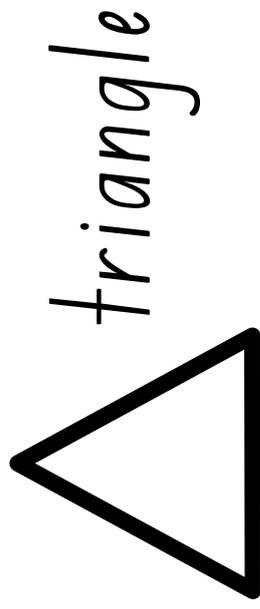
SEA FOR YOURSELF

Stingray activity

Use a marker to connect the dots and draw your Eagle ray.
Glue triangles onto your stingrays wings.



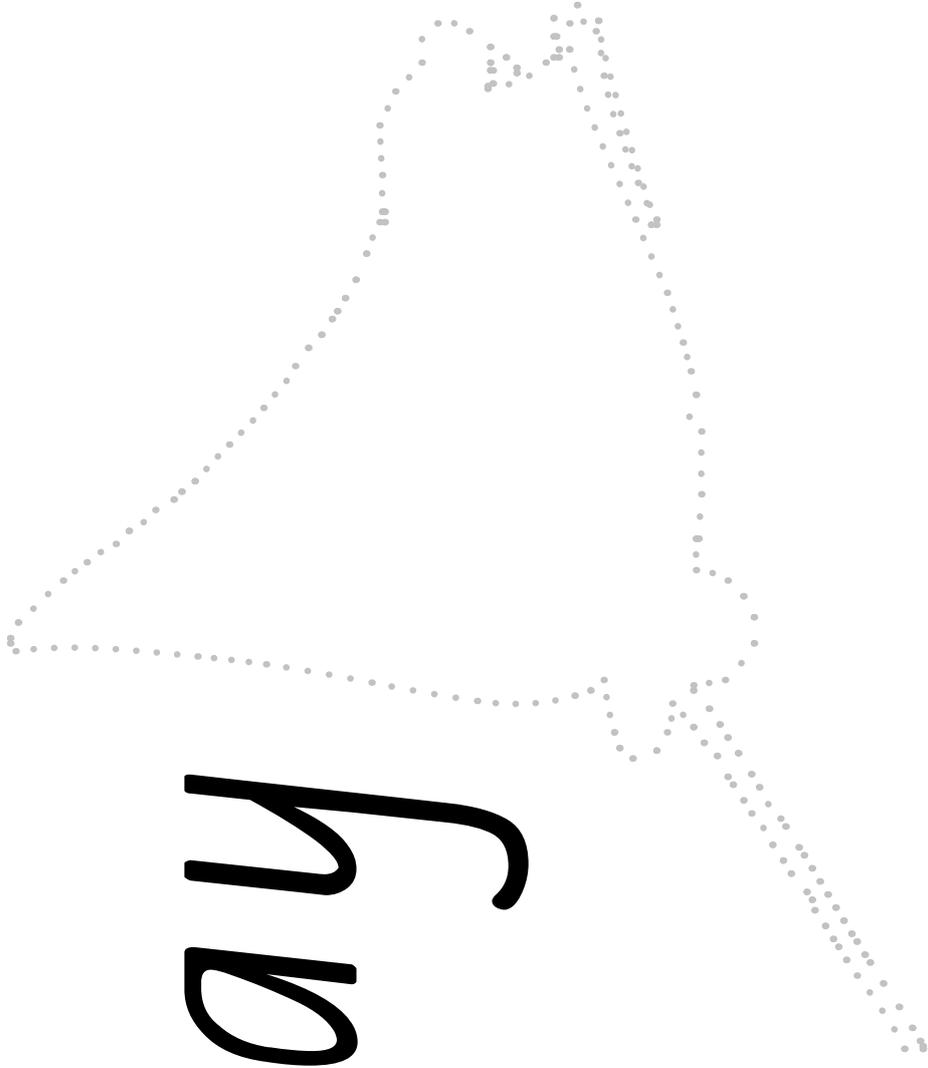
How many stingrays are inside this triangle?
What one is the largest?
What one is the smallest?



THE AQUARIUM OF WESTERN AUSTRALIA
SEA FOR YOURSELF

Start in

stingray



THE AQUARIUM OF WESTERN AUSTRALIA

SEA FOR YOURSELF



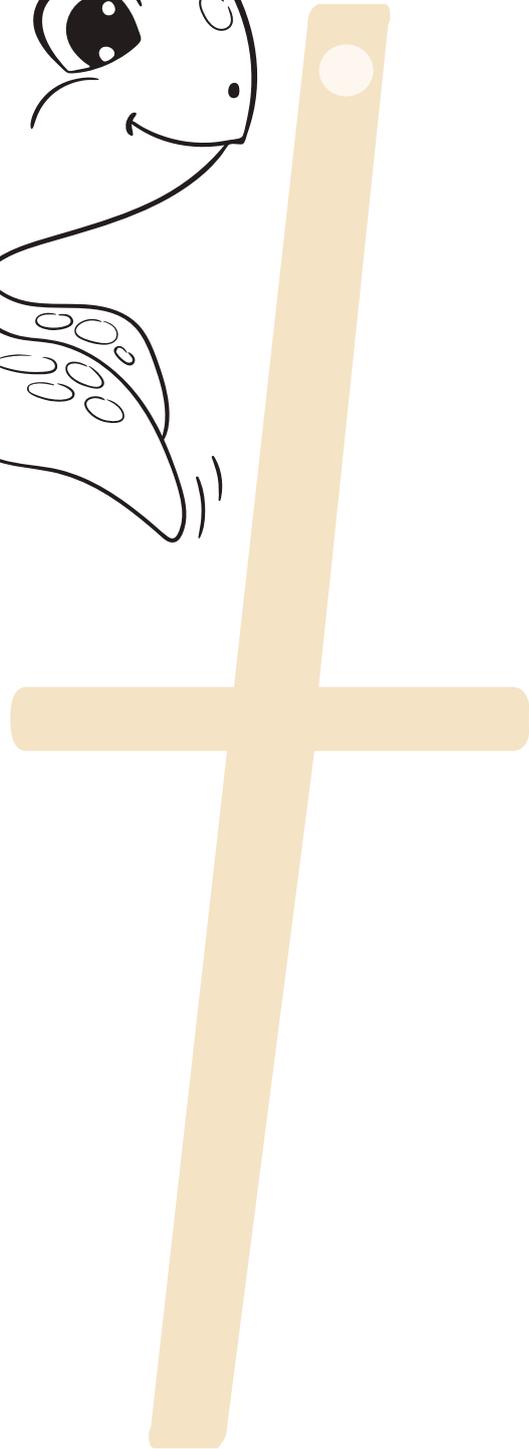
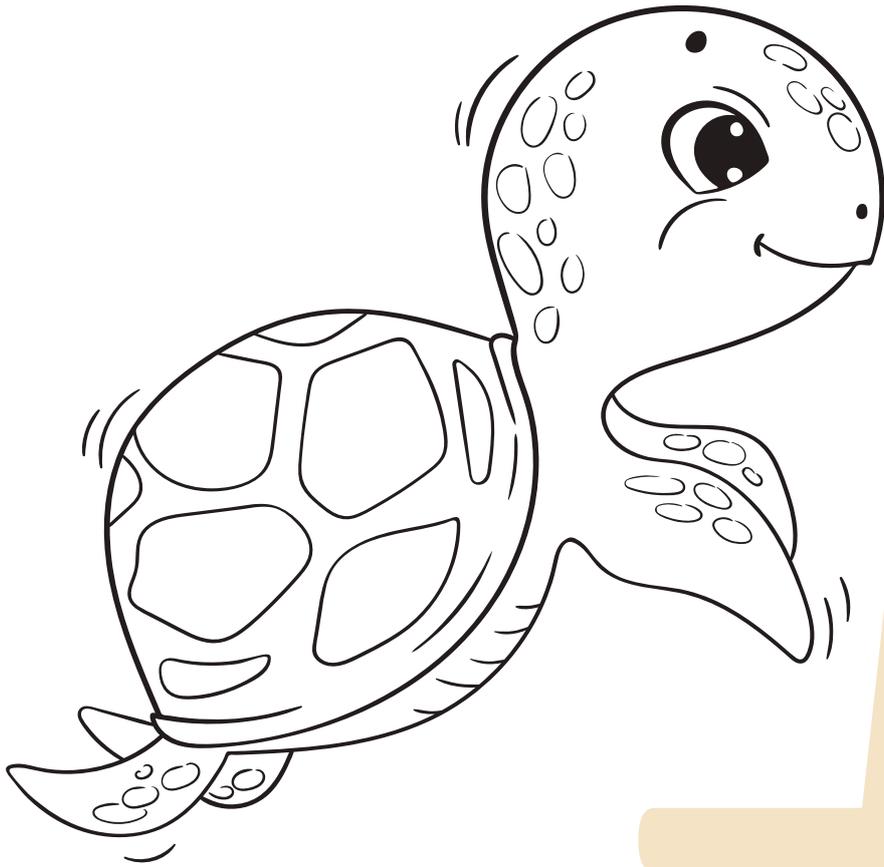
S s

Seahorse



THE AQUARIUM OF WESTERN AUSTRALIA

SEA FOR YOURSELF



T t

turtle



THE AQUARIUM OF WESTERN AUSTRALIA

SEA FOR YOURSELF

Jellyfish

Kindy

TEACHERS
NOTES

1. Jellyfish have no brain, no bones, no heart and no eyes
2. Jellyfish are 95% water
3. Jellyfish can't swim against the ocean currents, they can just roll around or go up or down in them. That doesn't matter though as neither can their food. Thanks to the currents jellyfish don't need to look for food - it finds them! Tiny plants and animals called plankton are swept into their tentacles and then into their mouth.
4. Jellyfish have 4 tummies! So if they find food they can eat lots of it before it floats away.
5. Jellyfish sleep! They have a little nap in the afternoon

Turtles

1. Turtles are ancient sea creatures; there were turtles when there were dinosaurs and there are still turtles today!
2. Turtles don't have any teeth!
Turtles have a flat plate in their mouth which they use to grind up food.
Most turtles like to eat squishy things such as sponges and jellyfish.
The green turtle just likes to eat veggies (algae and seaweed)
3. Turtles breathe air.
They have lungs like us, not gills like fish. Turtles hold their breath underwater then swim to the surface to take another gulp of air. Turtles can hold their breath for over 20 minutes!
4. Turtles always come home.
Turtles catch currents across the ocean to find different feeding grounds. When it is time to have babies they find the way back to the exact beach on which they were born. Only mums come onto the sand and when they do they leave special 'turtle tracks'.
5. Turtles hatch out of eggs. If the eggs have been in warm sand they are all born girls. If the eggs have been born in cold sand then they will be boys.



THE AQUARIUM OF WESTERN AUSTRALIA

SEA FOR YOURSELF

Stingray

Kindy

TEACHERS
NOTES

1. Stingrays have a flat body for hiding in the sand.
2. Wiggle your nose, it is made of cartilage.
This is different to the bones in your arms or legs. Stingrays don't have any bones just cartilage. It is lighter and much more flexible.
3. Stingrays flap their wings to move.
Eagle rays flap like a bird, smooth rays look like their making waves.
4. A stingray's mouth is underneath their body - this is because they like to find food hidden in the sand, with a mouth underneath they can swoop down and collect it easily
5. Stingrays have flat grinding teeth like we have at the back of our mouths.

Lionfish

1. When the lionfish spreads out its huge side fins it looks like it has a lion's mane.
The lionfish uses these fins like a net to scoop fish against a rock
2. The lionfish can open its mouth very wide to quickly suck all the fish inside.
3. Lionfish are covered in stripes - this helps them to hide, and to sneak up on their food.
4. Lionfish often hide in caves, sometimes they will hang upside down with just their spines sticking out.
5. Don't touch a lionfish! The spines on its back are full of venom and really hurt!

Seahorses

1. Seahorses are the slowest fish in the ocean.
2. Seahorses can move their eyes separately & see in two directions at once!
3. The seahorse daddy's are the ones that have the babies. The mummy puts eggs in the daddy's pouch and he carries them around until they are ready to pop out.
4. A seahorse's long snout is like a straw. With a puff of their cheeks and a snap of their head they suck up their food and swallow it whole.
5. Seahorses can do things other fish can't. Seahorses can curl their tail, swim backwards, up, down and spin on the spot.



THE AQUARIUM OF WESTERN AUSTRALIA

SEA FOR YOURSELF



(To the tune of wheels on the bus)

The jellyfish in the ocean go up and down, up and down, up and down
The jellyfish in the ocean go up and down, all day long.

The sharks in the ocean go snap, snap, snap; snap, snap, snap; snap, snap, snap.
The sharks in the ocean go snap, snap, snap, all day long.

The starfish in the ocean go stick, stick, stick; stick, stick, stick;
The starfish in the ocean go stick, stick, stick all day long.

The fish in the ocean go swish, swish, swish; swish, swish, swish; swish, swish, swish.
The fish in the ocean go swish, swish, swish all day long.

The seahorses in the ocean curl their tail, curl their tail, curl their tail
The seahorses in the ocean curl their tail, all day long

The octopus in the ocean stretch out their arms, stretch out their arms, stretch out their arms
The octopus in the ocean stretch out their arms all day long.

The turtles in the sea come up for air, come up for air, come up for air.
The turtles in the ocean come up for air, all day long

The stingrays in the ocean flap their wings, flap their wings, flap their wings.
The stingrays in the ocean flap their wings all day long

ACTIONS:

Fingers in & out as your arm goes up and down (jellyfish)

Hands open and close as a snapping mouth (sharks)

Closed fist then fingers open out (starfish)

Palms together, move hands side to side (fish)

One hand straight, then curl fingers (seahorse)

Reach out your arms (octopus)

Tilt head up and gulp (turtle)

Flap arms out alike wings (stingray)

Wavemaker Challenge

STEM

In this activity students will follow directions, manipulate materials, experiment and think about solutions.

It links to the science curriculum and incorporates engineering design process skills: explore, create, and improve.

Wonder and Explore: What makes the sound of a crashing wave?

Activity Outline:

First we'll explore materials to see what ones can make a loud sound, then you'll create a wave maker by trying out ideas and then improve it by trying out more.

What you need:

1. A variety of different materials that will create a range of sounds. Suggested resources include: buttons, rice, beads, ribbons, pom poms, paperclips, dry pasta, sand
2. Small boxes - recycle materials by having students bring in used sultana boxes (or similar)
3. Mystery boxes - numbered small boxes filled with each of the materials you are using
4. Image on the board / table to depict either ends of the scale: quiet and loud
5. Sticky tape to seal up completed boxes
6. Glue sticks, strips of paper sized to cover their boxes, markers to decorate and / or any other resources for kids to decorate and personalise their wave makers.

Explore:

- Have students describe the sound a big wave makes as it crashes onto a reef.



K-2 activity



Curriculum links:

Science
inquiry skills
- Questioning
and Predicting,
Planning and
conducting

The Arts
Music - Skills
Development
of aural skills
by exploring
elements of music
including dynamics
(loud, soft)

What do they think makes the sound?

What sounds could these materials make?

Show students the materials and discuss what sounds they think they may make.

Shake a mystery box and have students guess which material they think is inside. Why?

Place the mystery box on the board ledge/ table - have students decide where on the scale it should go.

Continue to shake boxes, guess materials and place boxes along the scale - is it louder or quieter than those already on the board?

Explain that in small groups they will get a chance to explore the materials then they will go to a 'make it' table to create a wave maker of their own. They can use any of the materials and can even mix them but the challenge is to make it sound like a loud wave.

Students need to test an idea then try and improve it by trying something else.

Have a 'decorate' table that can be used by groups not at the 'explore' or 'create' tables.

On the 'explore table' have some of the materials and the mystery boxes for kids to investigate.

Ask students; What are you exploring? What have you found out?

On the 'make it' table; have the materials set out. Help students by putting an elastic band around their box to keep the tab down while they are experimenting.

Ask students: Does your wave maker sound loud or quiet? Which materials did you use? Why?

Even if it works well encourage students to try and improve.

What did you change? Is your wave maker louder than before? Does it sound like a crashing wave?

Have students count the number of materials they have placed inside.

Can they make a loud sound with fewer than 5 materials?



THE AQUARIUM OF WESTERN AUSTRALIA

SEA FOR YOURSELF

Wavemaker Challenge



General Capabilities - Critical and creative thinking

Once students have come up with their favourite mix have them record which materials they used with pictures or words; take the elastic bands off and tape up their boxes.

Students can then go to the decorate area.

Reflection - End of activity

Play the sounds of crashing waves while children demonstrate their wave makers.

Play the soothing sounds of calm lapping water. What is making this sound?

How might we make this calm wave sound?

Leave the calming sounds on while you reset for the next part of the day.

What does make the sound of a wave crashing?

- The popping of bubbles made by the wave.
- As a wave breaks millions of tiny bubbles form within the surface water.
- Its the sizes of these bubbles that determine what a wave sounds like.
- Big bubbles form when a wave curls over itself, smaller bubbles form from the splash when the tip of the wave collides with the front of the wave.
- Wave will sound different as they will have a different mix of big and small bubbles.

Reefs protect shorelines because they cause waves to break offshore, thus limiting the energy that hits the coastline.

In 2015, Scientists studied the impact of a cyclone that struck Ningaloo Reef and caused extensive damage along the coast of Western Australia. They compared cyclone impacts on coastlines with and without reef and found that the beaches without reef had ten times more erosion!

Extension:

We made wave sounds but did you know that sound travels in waves? There are many sorts of waves, what other ones can you think of?

WOW:

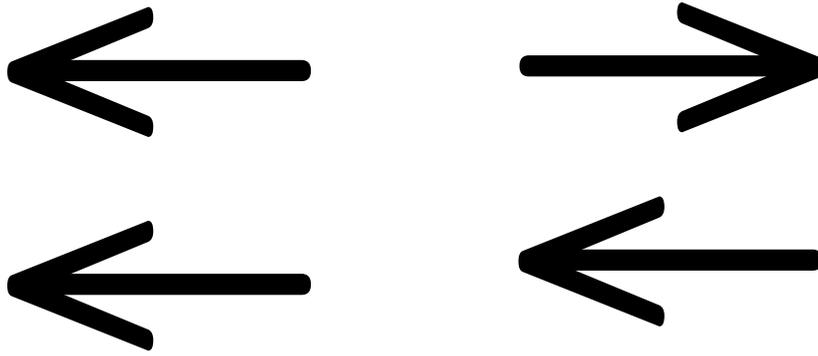
Sounds travels faster through the ocean than the air.

Why? Sound passes through molecules - it travels faster through water than air as the molecules are closer together. It travels even faster through solids.



THE AQUARIUM OF WESTERN AUSTRALIA

SEA FOR YOURSELF



What you need:

Clear cups,
Jug of water,
Plain paper
Marker pen

Archerfish & The Reversing Arrow Trick!

Wonder and Explore: Water can slow down light!

How to investigate:

Fold your piece of paper in half (like a tent / landscape card)

Draw 2 arrows on the front of your piece of paper

Prop up your paper and set a clear cup in front of the arrows.

Which way do they go?

Keep watching the arrows as your partner slowly pours water into the glass.

Which way do they go now? The arrows change direction!!

Why?

Your eyes see light.

To get to your eye light can go through things or it can bounce off them.

When light goes through things some times it goes fast and sometimes it goes slow.

Sometimes it goes straight and sometimes it goes bendy.

When light goes through water it goes slow and bendy.

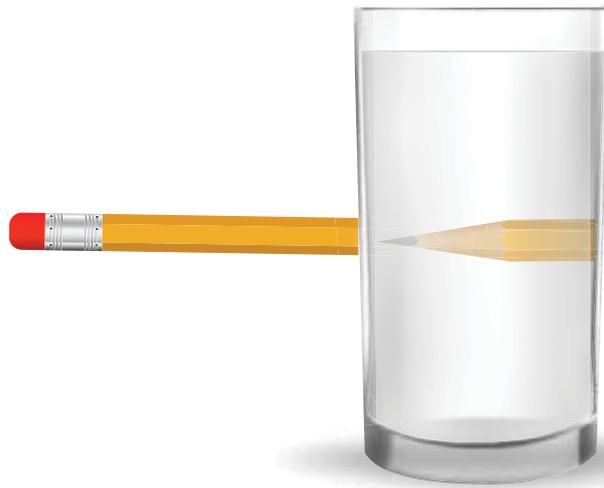
Then light goes through air it goes fast and straight.

Magic happens when you can see fast light and slow light at the same time!



THE AQUARIUM OF WESTERN AUSTRALIA

SEA FOR YOURSELF



Keep exploring:

What if you have water just covering one of the arrows? The light travels at different speeds in the air and in the water, only the arrow behind the water changes.

Place a pencil in the cup of water. Look at it from the side.

What is funny about how it looks?

Light travels slower through water. The more it slows down the more it bends. The bend in the way the light is moving creates the bend in the pencil that we see.

Hold a pencil lengthways behind the glass - What happens?

Draw an insect on your piece of paper then look at it through the water - does it move?

Linked idea's

What else can light go through - what can't it go through? - Experiment with trying to look through cellophane, different types of paper, kaleidoscopes, cardboard, glass etc.

Ocean Link:

The Archerfish may live in the ocean but it has decided that it doesn't want to eat anything from the water, instead it catches insects from the air above! They use their mouth like a water pistol and shoot droplets of water into the air and up to 2.5m away! They are so good at hitting their target that they are in the Guinness book of records for super spitting! What is amazing is that when they are aiming they know how to work out the bend in the light so that they know just where that insect really is.



THE AQUARIUM OF WESTERN AUSTRALIA

SEA FOR YOURSELF