

Murder Mystery on the Rocky Reef

An education resource for years 4-6



“Use the fishy webcams to try and help me, Detective Shell-Look Homes, find out what happened”

Murder Mystery on the Rocky Reef

This educational activity resource was designed and illustrated by Emily Colquhoun, a student from the Centre for Science Communication, University of Otago, with help from staff at the New Zealand Marine Studies Centre

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Information for Teachers and Parents. This educational activity resource features animals and plants found on the rocky shore. All of the footage and animals can be found in the touch pools or tanks at the New Zealand Marine Studies Centre (NZMSC). This resource is designed to be used using the live webcams streaming from the NZ Marine Studies Centre and videos created for this resource from the pools on display: <https://www.otago.ac.nz/marine-studies/webcams>. Children are encouraged to complete each activity and fill out the evidence table on the final page. Further resources that build on the food web knowledge include 'Who Eats Who?', rocky shore colouring book and 'Life in a Rock Pool', activity poster, which are available to download from www.otago.ac.nz/marine-studies/resources.

The Centre for Science Communication, University of Otago, is one of the world's largest postgraduate facilities in teaching the practice of communicating science. Focusing on three main disciplines, filmmaking, science in society and writing, providing students with practical experience in the field science communication. This resource was created by a postgraduate student for an internship that was undertaken as part of the qualification.

The four live **webcams** at the NZMSC are live streams from our touchpool, seahorse tank, fishy tank (crayfish and other fish) and the harbour. They are designed to promote community participation in the local marine life.

The New Zealand Marine Studies Centre, part of the University of Otago's Department of Marine Science, showcases marine life from southern NZ waters and provides expert knowledge and education about New Zealand's marine environment. The educational programmes involve students in the excitement of scientific discovery, help them develop knowledge and skills, and encourage individuals to take responsibility and action for the future of our ocean resource. Contact the NZ Marine Studies Centre for further information about the range of educational programmes and resources available for schools and interest groups.

This resource supports the **NZC** science levels 2-3: **Living world: life processes:** recognise that all living things have certain requirements so that they have stay alive. **Living world: ecology:** explain how living things are suited to their particular habitat and how they respond to the environmental changes, both natural and human induced.

New Zealand Marine Studies Centre

Call (03) 479 5826

Email marine.studies@otago.ac.nz

Visit www.marine.ac.nz

FRIDAY 15 NOVEMBER 2019

ROCKY REEF TIMES



Detective Shell-Look Homes and Dr Watson are leading this investigation

Murder on the Reef!

Yesterday morning Detective Shell-Look Homes was on his way to have a morning feed in the seaweed patch when he noticed the empty cockle shell on his path. After some investigation he realised that the victim was Coco the Cockle and that someone had killed and eaten her. This was no accident!

Detective Shell-Look Homes said that a number of suspects have been identified. The fishy webcams, that are constantly filming the area, may shed some light on the situation.

Dr Watson, a marine science expert, has been brought onto the case. He will be working with Detective Homes to rule out certain suspects based on their behaviours.

Detective Shell-Look Homes gives his sympathy to the family and friends of Coco and ask for the support of the community to help him solve this case.

If you have any information regarding the disappearance of Coco the Cockle please contact the Otago Harbour Police Department.



A photo of Coco the Cockle, the victim, prior to her murder

A reward is on offer for anyone who can identify who the murderer is. Please follow the enclosed instructions and submit your conclusions.

Trina Triplefin

IN THIS ISSUE

**SEA LEVELS
CONTINUE TO RISE**

**A WIN FOR THE PORTOBELLO
PITCHES**

**CONSTRUCTION PLANNED
FOR THE WHARF**

1. Evidence

Collect the evidence from the murder scene. We are looking for an empty cockle shell that was found in the touchpool.



Use the touchpool webcam to find it:

<https://www.otago.ac.nz/marine-studies/webcams>

***Activity 1:** Murder Scene – describe the empty cockle shell.

2. The suspects

***Activity 2:** Find the suspects.

In order to interview the suspects, we need to find them. The wanted poster on the next page illustrates who is under suspicion. Use the live touchpool cam, seahorse cam, and fishy cam to locate where all the suspects are right now. If you are struggling to locate one of the suspects, check out the [‘Find the Marine Creatures’](https://youtu.be/kmfd8wrMli8) video: <https://youtu.be/kmfd8wrMli8>

Note the tank where each suspect is found in the evidence table.

Help me find all
the suspects!



WANTED

For questioning regarding the disappearance of Coco the
Cockle



Stephanie Seahorse

She is often found hiding amongst the seaweed, have a look in another tank!



Professor Scorpio Sea Star

He is often found on top of rocks or on the side of the tank using his tube feet to stick.



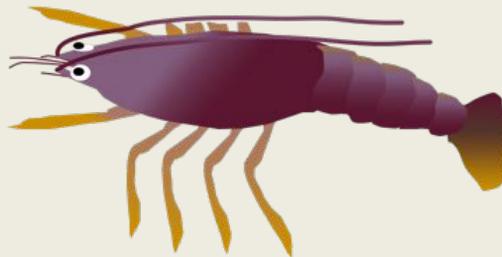
Doctor Watson Camouflage Crab

He is often found under seaweed so can be hard to spot! He is nocturnal and does not move much so keep an eye out.



Donald Duck's Bill Limpet

He looks like a large slug and does not move a lot so look closely.



Mrs. Crabb Crayfish

She is quite large so easy to spot. Have a look in another tank.



Karen Cancer Crab

She is often found hiding under stones but be careful her claws can be sharp – also known as a pie-crust crab.



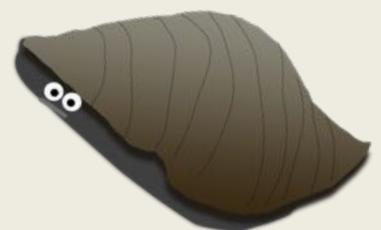
Mr. Mussel Man

He is often found attached to the side of rocks or other shells.



Trina Triplefin

She is gentle and quiet, so she may be hiding in a shell or under a rock.



Wallace Whelk

Can be found on top of rocks, or on the side of the tank.

If found, please report their location in the evidence table

3. The Interviews and Eyewitness Accounts

Read the interviews and eyewitness accounts below. Record preferences for their feeding on the evidence table.

Interview 1



Hi Professor Scorpio and Trina. Did you see anything suspicious last night?



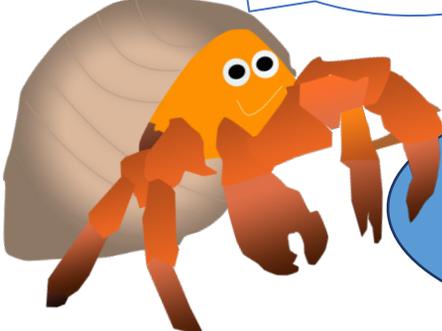
No sorry, I was just stargazing.



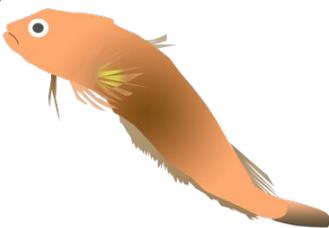
I saw Karen acting strangely. She was dancing around the tank looking very happy.



I love a tasty mollusc, so mussels, oysters if I'm lucky or even on occasion a cockle but I would never eat Coco she was my friend.



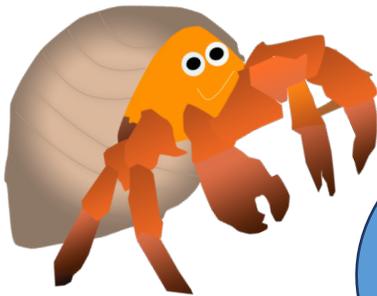
Ok then, I just have one question for you: what are your favourite foods?



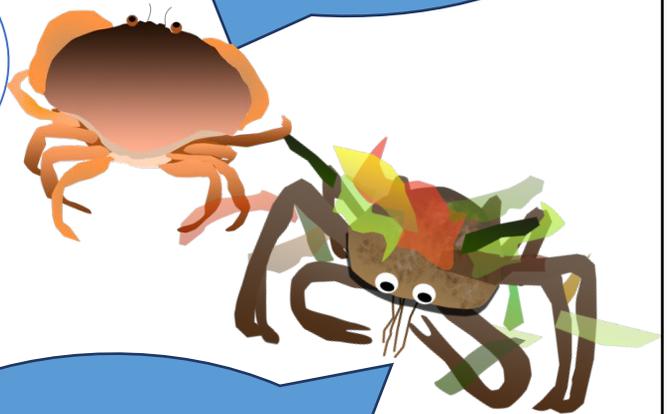
I eat small invertebrates and love the fish and other things they cut up for me here.

Interview 2

My fellow crabs, how was your night, Karen and Dr Watson? I hear you were acting strange, Karen?

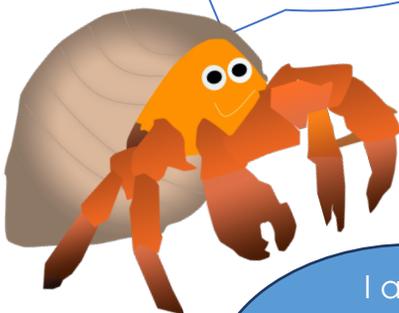


I fed on a lovely snail last night and when I was full, I danced around my tank.



Heyo friend, yes now that you mention it, because I am nocturnal, I did see Wallace arguing with Coco. It sounded serious; Wallace was mad!

Oh cool, my other question for you is what do you eat?

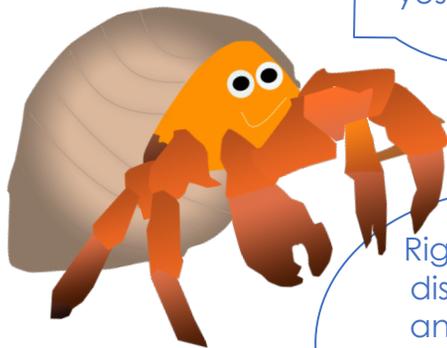


I eat loads of different things depending on what I feel like, so I am a carnivore. Mussels, gastropods and some crustaceans too.

I am a scavenger so whatever I can find, often dead animal flesh.



Interview 3

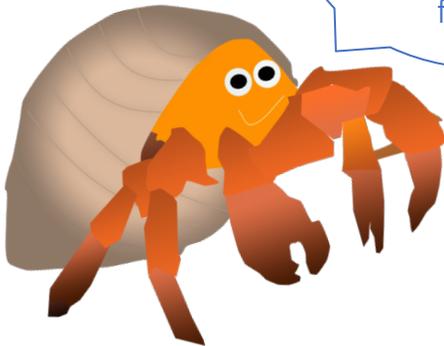


Hi Wallace,
were you
fighting
with Coco
yesterday?

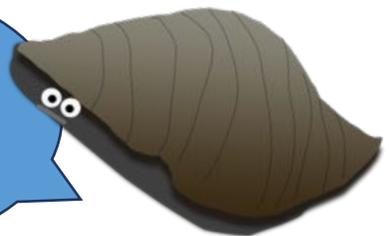
Oh yeah I forgot
about that, sometime
my temper is out of
control, we fought
over who had the
nicest shell.



Right, that's a
discussion for
another day.
What are your
favourite
foods?



Um... I am a
... herbivore
and only eat
grass and
plants...



Eyewitness account 1

Last night I was with Mr Mussel Man and Donald Duck's Bill Limpet so I know it can't be them, and just in case you are wondering I eat small food particles and am a scavenger. I know that Mr Mussel Man is a filter feeder and Donald is a grazer and eats seaweeds.



Eyewitness account 2

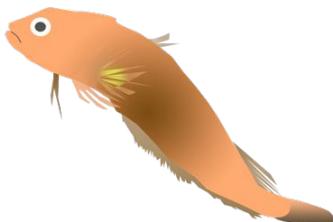
Now I can't interview Mrs Crabb the crayfish or Stephanie the seahorse because they are in different tanks, but I looked at the footage from last night and they were in their tanks.



4. Checking the Evidence



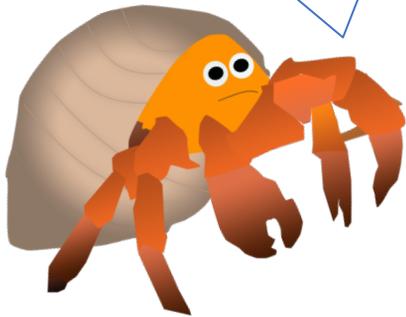
***Activity 3:** Is anyone lying? Watch the [Marine Animals Feeding](https://youtu.be/4EtLGHdpZqM) video: <https://youtu.be/4EtLGHdpZqM> and circle the lying creature, remember to fill it on the evidence table.



It was Wallace the whelk, they eat molluscs!

Now I'll ask Wallace why he lied to me.

You lied to me!
From the videos I
can see that you
are not a
herbivore, why did
you lie?



I am sorry Detective
Homes, I promise I
didn't eat Coco but I
just thought I would
be the prime suspect
because I was
fighting with her
earlier.

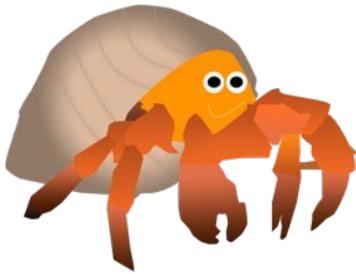


Hmm, interesting! So now we know that Wallace is a prime suspect because he does eat cockles and lied! Who else do you think it could have been?

It can't be Trina, Stephanie, Donald, Mr Mussel, Dr Whatson or me because we do not eat cockles.

5. Shell Evidence in the Tanks

***Activity 4:** Examine the all the tanks from the webcams, does it contain shells that look like the empty shell? You may need to look at the other footage.



Do all the tanks contain the right shells?

***Activity 5:** Draw a line connecting the tanks with the correct shell but be careful because some tanks have none.



6. Who did it?

My top four suspects are the Mrs Crabb the **crayfish**, Wallace the **whelk**, Karen the **cancer crab** and Professor Scorpio the **sea star**.

Now examine and fill in your table, we know

1. What they eat
2. Where they live
3. How they eat
4. What shells are in what tank

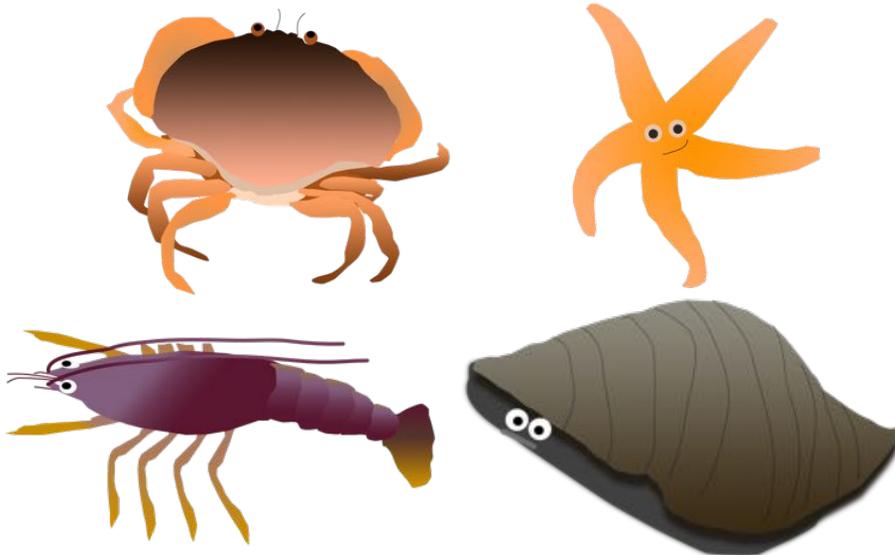
So I think I know who it was but just to be sure I have one more task.

I have some camera footage at the police station. Have a look what we caught our main four suspects doing yesterday morning before the murder.

***Activity 6:** watch the [Find the Marine Creatures](https://youtu.be/kmfd8wrMli8) video: <https://youtu.be/kmfd8wrMli8> to see what they were up to yesterday, Remember to fill in the table.

We have enough evidence for working out who did it from our top 4. Use your table to work out which suspect is our murderer.

***Activity 7:** Circle the murderer



7. Conclusion

Even though Detective Shell-Look Homes lost his friend Coco, he understands that this is part of the food web. Each animal has their own role to play in the food web. While sea stars, whelks, crayfish and cancer crabs eat cockles, some fish, birds and humans eat these sea creatures.



The sea creatures in the touch tank were collected from the Otago Harbour. Only a few creatures were taken and put in the tank. We need to look after our sea life and so do you. If collecting shellfish or fishing, follow the rules, these are set out to ensure that the sea life is here for years to come.



