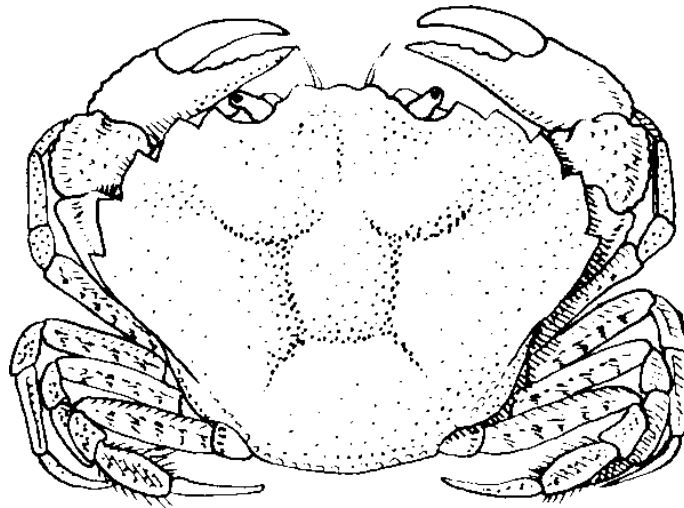


Seashore Activities



Suggested activities for groups at the seashore



Produced by the St Abbs & Eyemouth Voluntary Marine Reserve and based on original material from the "Bridging the Border" Education Project "Discovering Habitats in the Tweed Catchment" pack.

Bridging the Border



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An example of a seashore activity.

A guide to seashore minibeast hunts

From the group's point of view, the closer the activity sites are to the base, the more likely they are to be accessed on a regular basis throughout the year. There are however limits to this. An obvious example of this is a seashore study which is not easily accessible for more than a handful of local groups. However, most groups with suitable advance planning can arrange a trip to the seashore and will find the experience well worth the effort

Where should we do activities?

In general both rockpool areas are better than sandy shores and will produce lots of animals at virtually any time of the year. Spring tides, which despite their name occur once every two weeks, are especially good times to visit the shore, particularly if the visit can coincide with the period when the lowest part of the shore is exposed. The lowest spring tides generally occur in March or April and again September and October.

As visits to the seashore are usually one-off visits, look at the range of animals present, and in particular at the range of animals found at different levels of the shore.

Depending on their adaptations to exposure to the air by the falling tide, different animals live at different levels on the shore. The Upper Shore animals have the most extensive adaptations to living in to what is for marine animals, a hostile environment. Those that live on the Middle Shore and Lower Shore are progressively less able to cope with these demands.

This means that there is a broad spectrum of creatures living in the inter-tidal zone that can be searched for by groups.

Animals must have both body and behavioural adaptations to:

- being exposed to the air
- living in warm, sun-heated water where evaporation increases salinity
- living in the parts of the shore where wave action is most pronounced
- being exposed to predation by animals from the land, as well as the sea

Adaptations include:

- thicker shells to withstand surf action and rolling boulders
- shells that hold breathable water during exposure at low tide
- living in sites where water is held at low tide
- camouflage (green on the upper shore, brown and red lower down the shore)
- strong suction pads
- transparent bodies

Adaptations in fish include:

- the ability to change colour according to background (and emotion)
- eel-like body plans that allow entry in cracks and between rocks
- suckers on the belly
- skin rather than scales to reduce accidental damage by striking rocks in surf

The sea shore is a profoundly dangerous place for life.

Some might ask why they bother. The principal reason is the shore is where currents accumulate large quantities of food. Plankton, dead plant and animal material, as well as the eggs and larvae of many creatures, end up next to the shore. Living on the shore allows animals to exploit that food resource.

This point offers an alternative approach to investigating the rocky shore.

How do animals make their living?

Seashore animals can be divided into four main strategies of getting food:

- herbivores that graze on the seaweeds and the algae covered rocks
- filter-feeders that sieve their food out of current
- predators that hunt the local animals
- detritus feeders that scavenge the dead animal and plant life

The task set for the group would be to both identify the animals concerned and to make some observations of them to see what they are doing and how they might make a living. The various adaptations the bodies of the animals may also provide clues as to their particular method of making a living.

Seashore activity 1

Rockpool minibeast hunt

Purpose: Learn to identify minibeasts on a rocky shore
Study the adaptations to life at different levels of the tide

Equipment: Collecting containers (plastic)
Small nets
Magnifying viewers
Rockpool minibeast identification guide

Safety Note - It is essential that groups are aware of the tide times before planning a visit. Access to the rockpools is considered safe **about 2 hours each side of LOW TIDE**

Instructions:

Upper shore - Animals can literally cover the rocky shore. Many shores are littered with barnacles, limpets, whelks and the like. Look at these first as they are plentiful because the tidal shore is where they live. Their bodies and lifestyle are adapted to living on the open rocks. They are glued to the rocks or stuck to the rock by suction, so that they cannot be moved by the surf. They are water-breathers but can survive exposure to the air.

Middle and Lower shore - The most interesting animals however live in the rockpools that hold the water at low tide. In effect rockpools are sample of the animals that live in environments permanently covered by the sea. To look at them is to look at submarine environments without the need of sub-aqua equipment.

Most of these creatures hide from view and other than a few fish and shrimps will not easily be found. They hide in crevices, under overhanging rocks but mostly under rocks and amongst the seaweeds.

Rocks can be turned over. You will basically find the best and most interesting animals under the biggest rocks. Lift as large a rock as possible by levering it on to its widest edge. Prop it up against your leg while you look into the rockpool below the rock. Allow the water to settle and try to get full sun onto the bottom of the pool.

Be sure to examine the underside of the rock. Wait a little time also allows animals that are lying 'doggo', frozen by the sudden disruption of their world, time to start moving again, the movement will catch your attention.

When finished, try to return the rock to the exact position you found it. Don't simply drop it back as you may not only kill some of the creatures but may also splash anyone else looking under the rock. This is especially true of encrusting animals such as sponges, seamats, anemones and sea-squirts. Searching through seaweed is generally less productive.

Seashore activity 2

Seabird city!

Purpose: Learn to identify the seabirds of the cliffs
Study the way different seabirds nest on different parts of the cliffs

Equipment: Binoculars
Seabird identification guide

Safety Note

If is essential that groups approach the cliff edge and **SIT DOWN** before starting to observe the birds, particularly if using binoculars. **DO NOT USE BINOCULARS WHILST WALKING**

Instructions:

Once at your observation point, try to observe the following:

1. Try and identify the main bird species on the cliff
2. Which birds nest on which parts of the cliff ?
3. Do birds of the same type nest in groups or separately ?
4. Is there any overlap between the nest sites of different species of birds ?
5. Can you see any eggs or young in the nests ?
6. Are the adults actively fishing and bringing food back to the nest ?

Seashore activity 3

Beach art

Purpose: To encourage the group to look at the shore environment from a different perspective.

Equipment: What you can find on the beach.

Instructions:

This is a very simple activity that can be done as a quick exercise or can easily fill a couple of hours. There is very little to limit the potential of this type of activity.

Simply find a quiet area of shore where there are plenty of natural materials to hand. Look for a shore with some driftwood, seaweed, stones and sand and you have all the materials you might need.

The youngsters can work individually or in groups. It is usually a good idea to give them some theme to work on - they can make animals, shapes (spirals, concentric circles etc), 2D images, 3D structures, anything goes!

They can select from a wide range of colours, textures, and sizes from the available material.

Encourage a bit of thought about design before they get started.

This works really well with all ages of young people and it can be very surprising the types of things they come up with. 3D starfish made of one colour of stone are usually popular but Andy Goldsworthy type sculptures are often popular too!

There will inevitably be some litter on the beach. Decide for yourself whether or not this can be used as suitable material. Washed up rope or netting is often useful for this activity so consider allowing the use of specific materials like this.

Seashore activity 4

Scavenger hunt

Purpose: To take a closer look at natural items washed up on the strandline.

Equipment: A prepared list of items that may be washed up.

Instructions:

The aim of this activity is to encourage the group to take a much closer look at the strandline, the thin band at the top of the beach where flotsam and jetsam is deposited.

This activity can be done on a short stretch of beach as a stand-alone activity or can be added to a longer coastal walk to maintain the children's interest and add a sense of competition.

At the beginning of the activity set boundaries of where the group can and can't go. Remember that most of the items will be washed up at the top of the beach that is usually marked by a line of dead seaweed.

Give the young people a list of commonly found items that may be found on the beach. Agree a time limit/end point and get them started. Once they have finished, put all the stuff they have found a pile and discuss each one in turn.

This is an opportunity to add in Kim's game if you like (removing an item while the group turn away, they then tell you what is missing).

Suggested items:

- A feather
- A crab claw
- A white stone
- A rough stone
- A smooth stone
- 5 types of seashell
- A piece of smooth glass
- 3 types of seaweed- red, green, and brown
- A piece of driftwood

Specifying a particular type of shell or different colours of feather can make the game harder. Even different parts of a crab can be used i.e. pincer, leg, body etc.

NOTE: There will be litter amongst some of the seaweed. Warn the group not to touch it and always make sure the young people do not eat during the activity and clean their hands afterwards.

Seashore activity 5

Creature creation

Purpose: To make young people think about the various adaptations and diversity of seashore creatures.

Equipment: Simple cards describing a variety of forms of feet, legs (numbers too), body shapes, and heads. These should be drawn from a range of species that might be seen on (or from) the shore. Seabirds, seals, dolphins, fish, invertebrates (sea snails, starfish, urchins, crabs, anemones etc) all provide a good range of species to draw your adaptations from.

NB. On the next page you will find some examples of suitable pictures which can be copied for this activity. Use these if you wish or find more of your own.

Instructions:

This activity works best if the group have spent some time looking at a range of different creatures. However, just a brief introduction to get them to think about all the different forms of these things might well be enough.

Split the young people into groups of two or three. Mix up each set of cards for feet, heads, bodies etc. and hand them out to the groups. Each group should end up with a full list of body parts that are hopefully unrelated.

On an area of sand they must draw this animal according to their list of criteria. After ten minutes or so get all the group to go round each “animal” in turn. The group that put it together must tell the young people its name, what it eats, where it lives and generally what it gets up to.

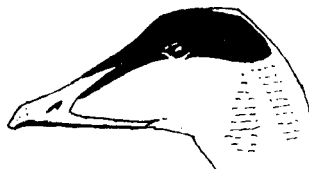
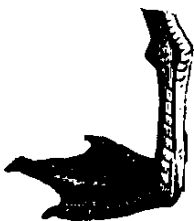
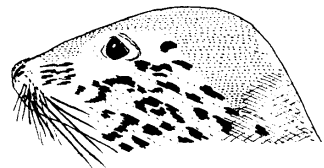
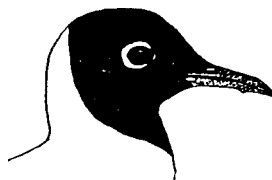
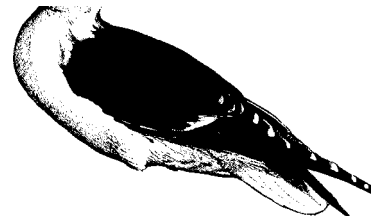
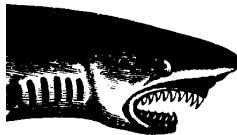
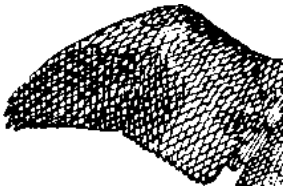
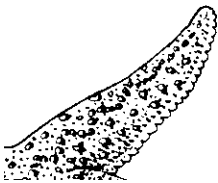
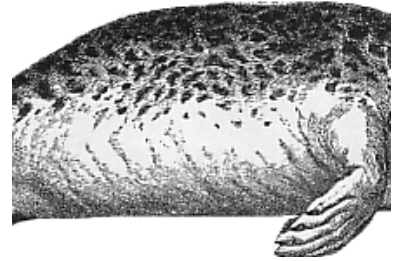
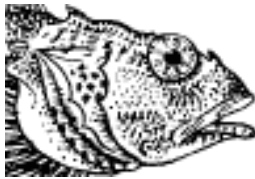
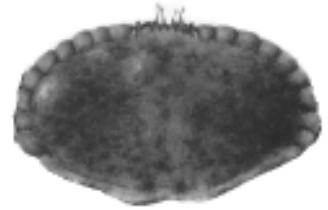
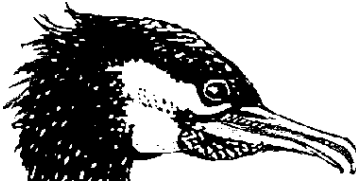
The more mixed up the features the better. For example: an animal that has a limpets big slimy powerful foot (singular), no legs, a fishes body and a gannets head.

The young people imaginations will easily fill the gaps in how such a creature might actually work!

This can be used as a good way of encouraging teamwork and communication skills.

Seashore activity 5

Creature creation picture sheet



Seashore activity 6

The limpet game

Purpose: To think about animal's lifestyles.

Equipment: None.

Limpets are the conical shelled creatures very common on most rocky shores. Their shell grows to exactly match the shape of a particular rock. This is the rock to which they must return after they have been feeding. Only on this area will their shell make a good seal that allows them to avoid desiccation when the tide goes out or in warm or windy weather. The seal also prevents gulls, oystercatchers, and other animals from getting into the shell and eating the limpet.

Instructions:

The aim of this game is to give the young people a good run around and reinforce the ideas of limpets having a 'home' they must always return to.

Spread the young people out on a sandy area of shore. They must draw a clear ring around them. This is now their home that they must return to.

The leader tells them that when the tide is IN they can move off and feed on the 'rocks' around them (but do this in a clear area without trip hazards). When the tide goes back OUT all limpets must get back home in order to survive being high and dry.

Do a few cycles of this to let them get the hang of things. Some young people will inevitably not make it back each time the tide goes OUT.

Take these young people and make them oystercatchers. They can catch limpets ONLY when the tide is out and can only catch ones that haven't made it home in time.

Conclusions from the game:

- The group will see that they must always feed close to home and those that do will survive the longest.
- If all the limpets are eventually caught then there will be a large oystercatcher population. However as this means that there will be no food for the oystercatchers, they will have to move to another area. This would obviously mean that the limpet population would be free to grow again.

Seashore activity 7

Junk music

Purpose: To build awareness of the issue of marine pollution and beach litter.
To encourage young people to look after their local environment

Equipment: What you can find on the beach

Instructions:

Participants sweep the beach for large litter items or any flotsam and jetsam that can be used to make “musical” instruments. Things such as plastic containers, rope, bottles, oil drums, bits of wood (and why not collect smaller litter at the same time and dispose of it properly). If there is not much to collect, these can be supplemented with things gathered earlier.

The instruments are then constructed - this can be as ad hoc as you like if it is just a one off activity, for instance using sticks and containers to have a drumming session. Or you could take your haul away to plan and prepare a range of instruments, you could even decorate them.

Here are some suggestions:

- *Smallish plastic container with a lid* - put some small stones inside and replace the lid to make a percussion shaker
- *Large plastic drum* - prepare sturdy sticks by wrapping material padding round one end and use as a base drum
- *Smaller drums* - thread material or rope through both ends to put behind your neck and use as a double ended drum
- *Bottle tops/ring pulls* - thread together onto a wire loop (old coat hanger) for another percussion shaker
- *Whole glass bottles* - use string to hang bottles from a long piece of wood and a small stick to strike the chimes (filling the bottles with small, differing amounts of water makes different notes)

The object of the activity isn't just to make a lot of noise - by getting young people to focus on creating different rhythms together you can get them working as a team, learning and expressing themselves in a new way and you could even perform a mini concert for the rest of the beach-goers!

N.B. Remember health and safety should always be a priority. Use gardening gloves when collecting/handling litter objects and if you are using tools careful instruction and adult supervision are essential.

If you are unsure about leading this sort of activity, you could hire someone in, for instance Michael Freeman has been running junk music workshops for 5 years and has many of the instruments already prepared. You can contact Michael at michael.music88@virgin.net or on 07903 173615.

Seashore activity 8

Seabird art and craft

Purpose: To carry out art and craft work connected to the observation of seabirds.

Equipment: Normal art materials
Guide illustrations provided (pages 13 - 16)
Beach litter for nest building activity

Instructions:

Drawing Seabirds

Produce your own pictures of the birdlife of our coastline by creating drawings and designs of seabirds. Even better - take a sketch book to the coast and draw the birds from life.

Use the illustrations on the following pages to help you to build up the construction of the anatomy of each type of bird. Each bird can be built from a series of triangles and rectangles like these:

Seabird Border

Use your sea bird drawings to create decorative borders. Copy or trace your drawings of sea birds and combine them in different ways to form long designs suitable for a border to surround another piece of work.

Introduce other decorative elements and shapes such as spirals, dog tooth and diamond motifs, chequerboard motifs, plants forms, eggs and landscapes.

Nest Building

If you were a bird how would you build a home for your brood? It's harder than you think especially if you had to do it with your mouth!

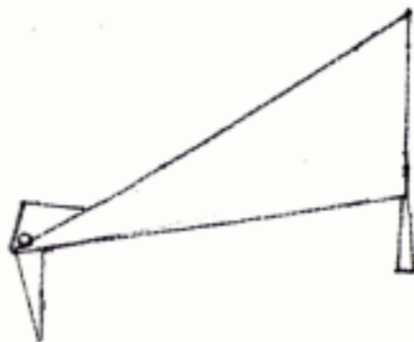
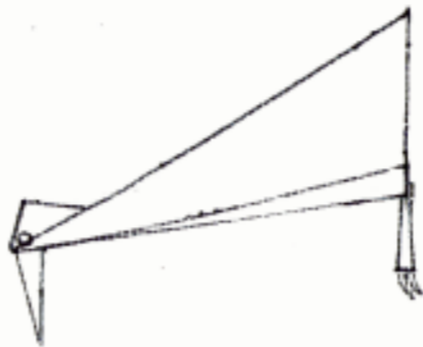
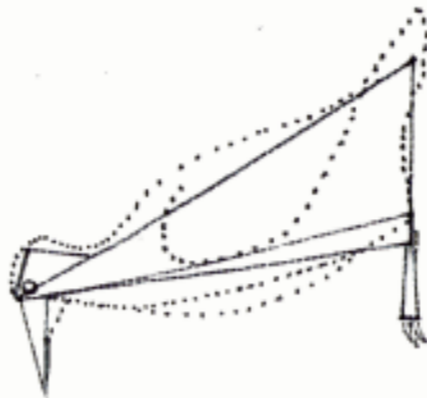
Collect string, twigs, grasses, feathers and mosses. Weave a nest by first constructing a hoop or ring from a strong but bendy twig. Lash it together with grass or string. Reinforce this hoop with more material wrapped and bound around it.

Begin to weave a basket form beneath the hoop using thinner twigs- under and over, under and over. Don't worry if your nest looks a bit messy - the birds certainly don't! You can even decorate your nest by incorporating objects into your weaving such nuts, seed heads or dried flowers.

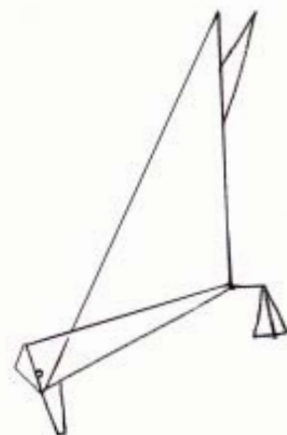
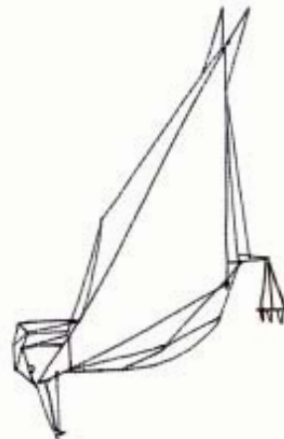
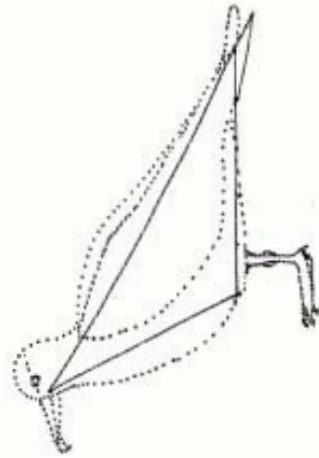
If you want to see if your nest will do the job it's designed for, why not put eggs in it - they could be real hen's eggs or chocolate ones. Try boiling hens eggs with onion skins wrapped round them to decorate them or paint them the colour of eggs that wild birds lay.

(You could also use the Royal Society for the Protection of Birds website to help you: www.rspb.org.uk/birds/guide/)

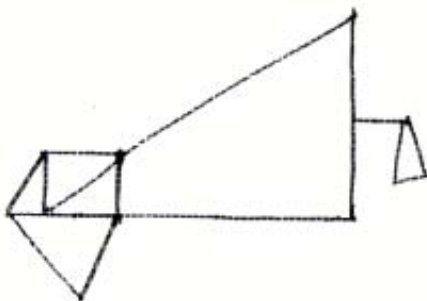
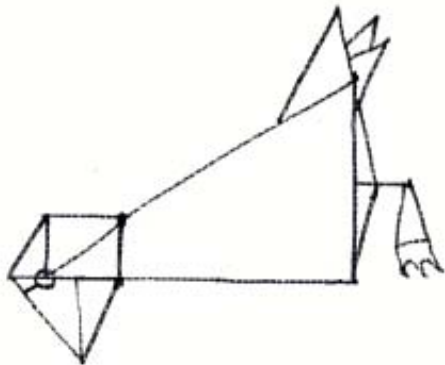
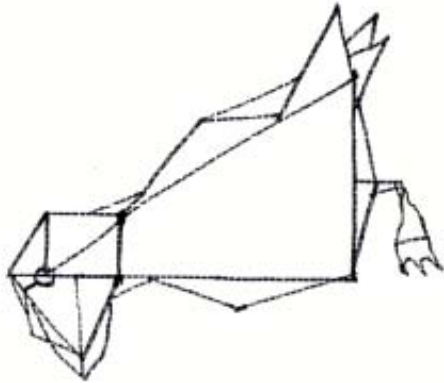
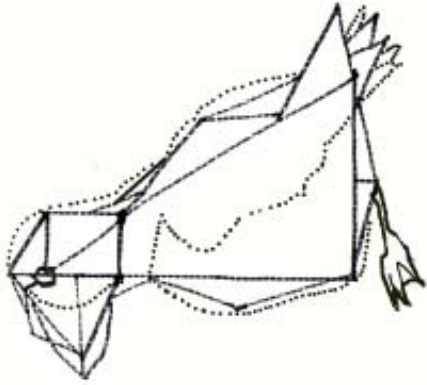
Guillimot



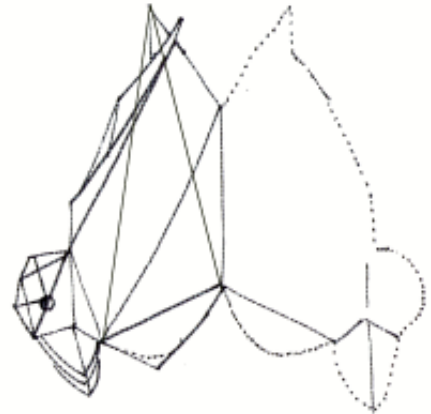
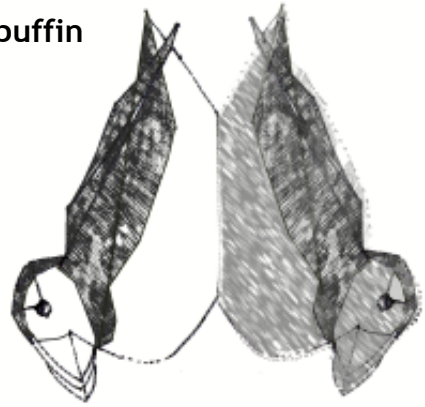
Gull

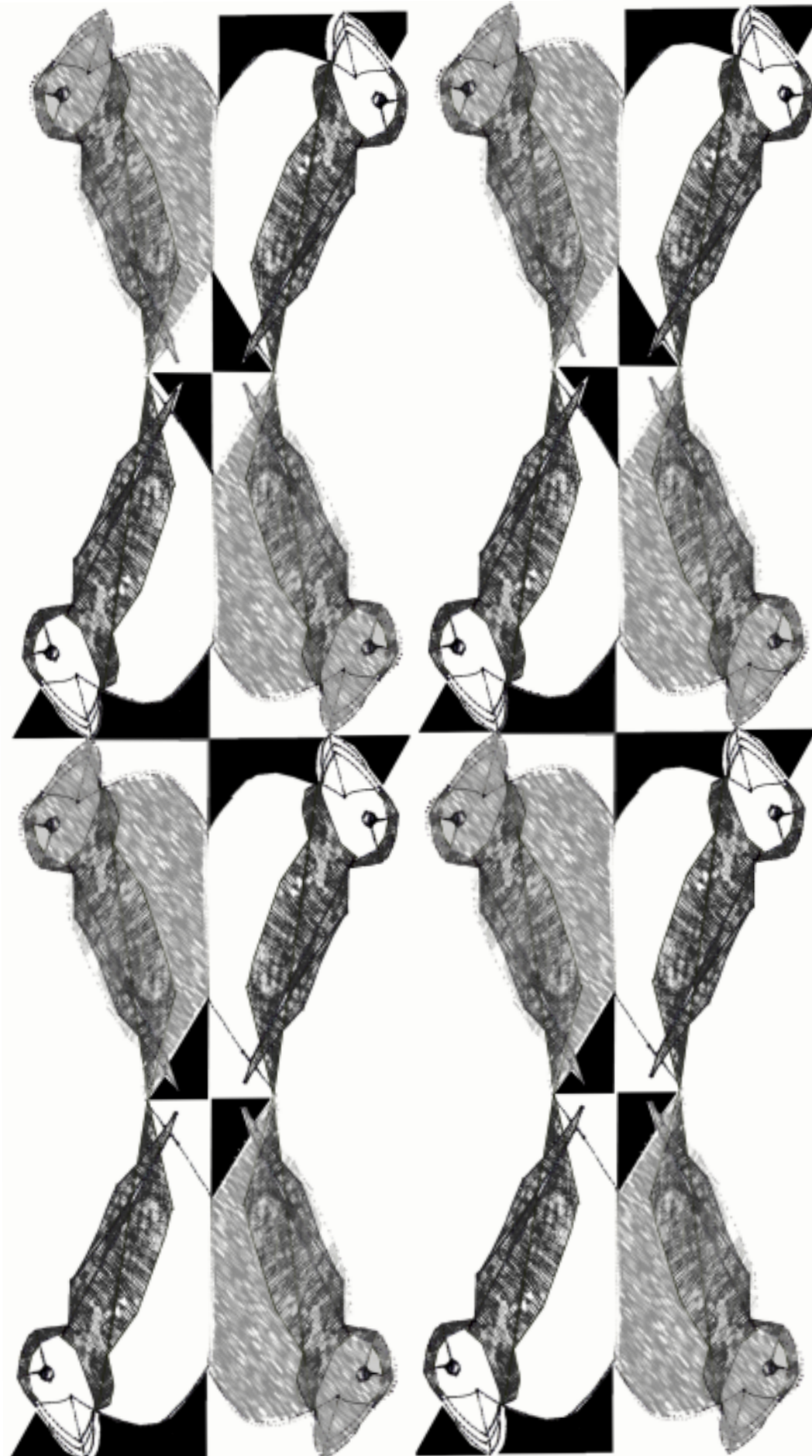


Puffin

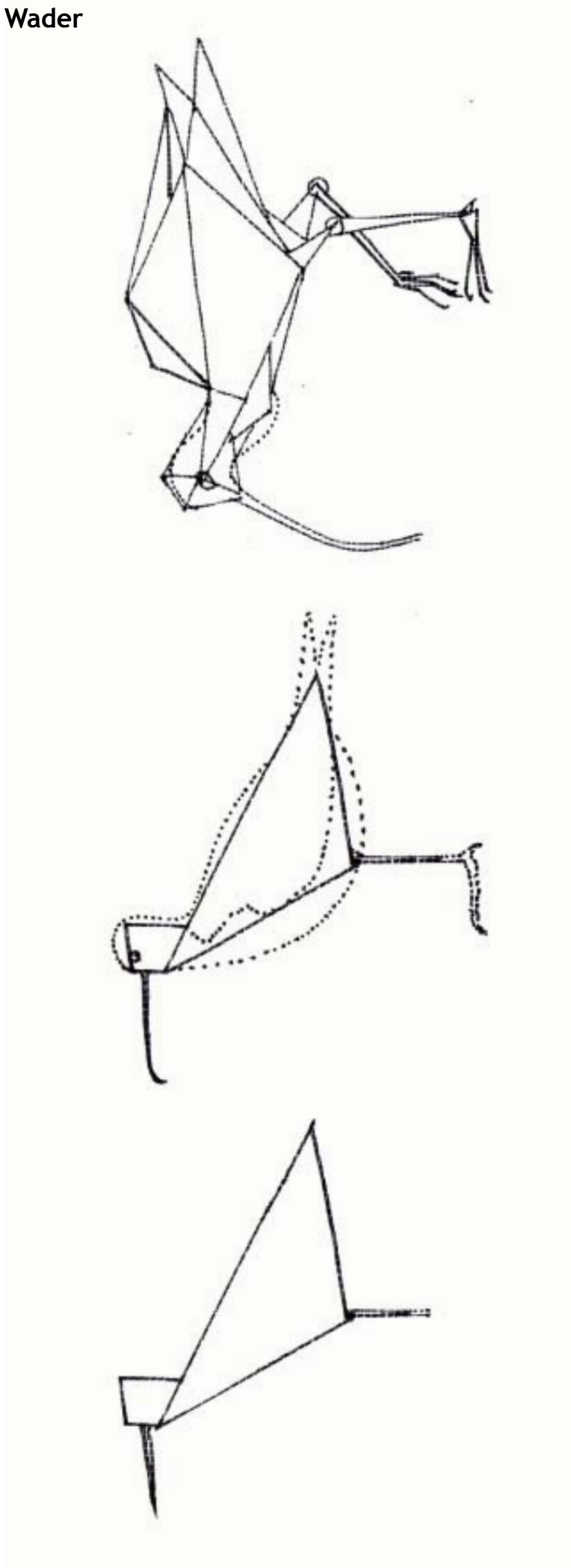


Floating puffin

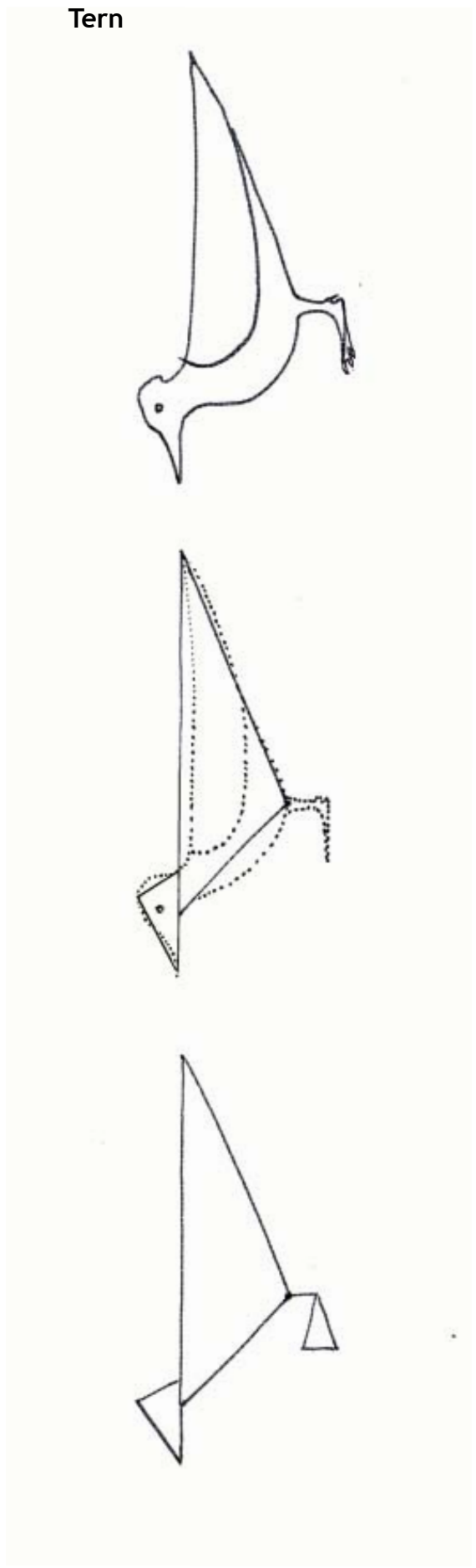




Wader



Tern



This document originally formed part of the
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