

Science Sleuths - A SCI-FI Science Adventure

Meet The Duck Defenders!

Episode 4

As the bright light fades away, you find yourself in a treehouse. It looks like Professor Evan has left you another note!

Welcome to the town of Marshdale! I sent you here to learn about the importance of wetlands from the Duck Defenders, local kids just like yourself who work to keep this special place safe. Use their journal to learn about a few of the important creatures that make their home around wetlands.

DUCK DEFENDERS JOURNAL ENTRY 27

Frogs can get sick very easily when humans don't take care of wetlands. Because of this, seeing how many frogs are in an area can be a good way to tell if the wetlands are healthy.

DUCK DEFENDERS JOURNAL ENTRY 34

Beavers like people are master makers. They create dams and move plant life which helps keep the whole wetland healthy. An Anishinaabe teaching tells us that we know the land has gone bad when even the beaver leaves it.

Activity Instructions:

Choose one of the following frog or beaver models and create it!

- Beaver paper model (easy)
- Fox origami (easy)
- Frog origami (easy)
- Frog paper model (hard)
- Next time you get a chance to go for a walk with your family, keep your eyes open for frogs and beavers! And remember the roles they play in wetlands!

You've learned what Professor Evan wanted you to learn, but where is the key? Why would he send you here to learn when you need to be collecting the keys to open Atlantis?

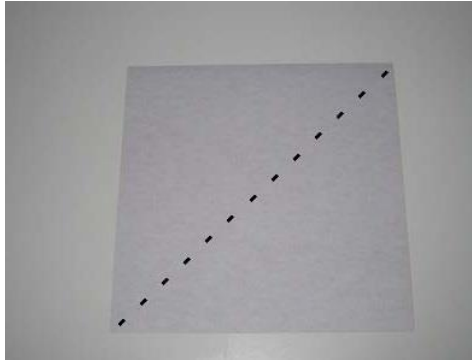
The time machine starts to light up and suddenly you're in Ancient Greece...

To be continued next week...

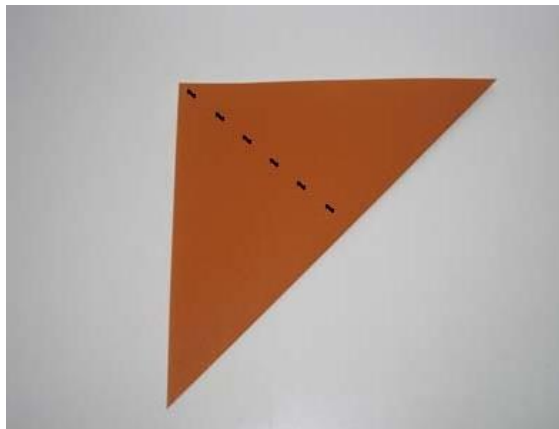
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Fox Origami Steps (Using Brown Construction Paper is Recommended)

Step 1: Start with a square paper, (whether you already have a square paper or you have to cut a rectangular one) Fold along the dashed line shown below.



Step 2: Fold the paper in half along the diagonal as shown on the dashed line below, crease and unfold.



Step 3: Now bring both the top right and bottom left tips to meet at point A as shown in the picture below.

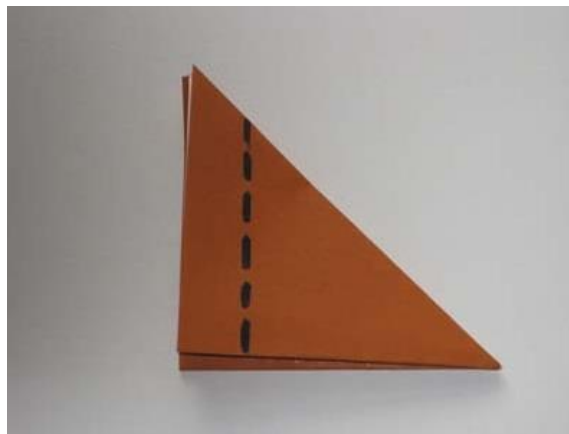


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Origami Fox Step 4: Now we fold the entire paper in half on the diagonal shown below. Notice "-.-.-" means that this is a mountain fold. So the crease should remain at the top. We fold both the tips Y and Z down.

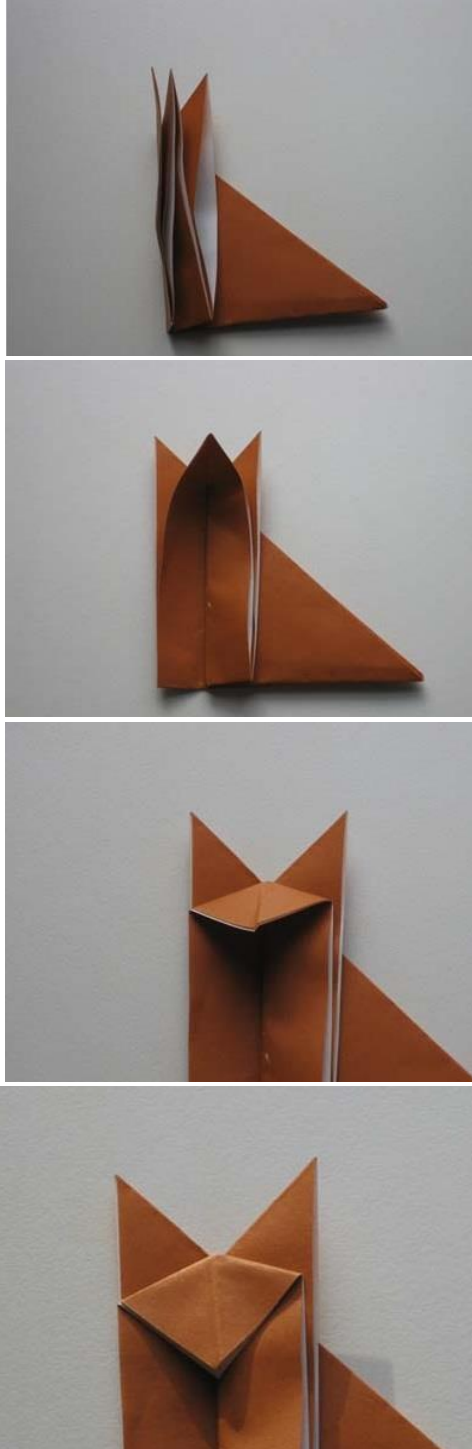


Origami Fox Step 5: Make a fold on the dash line shown below. Crease well.



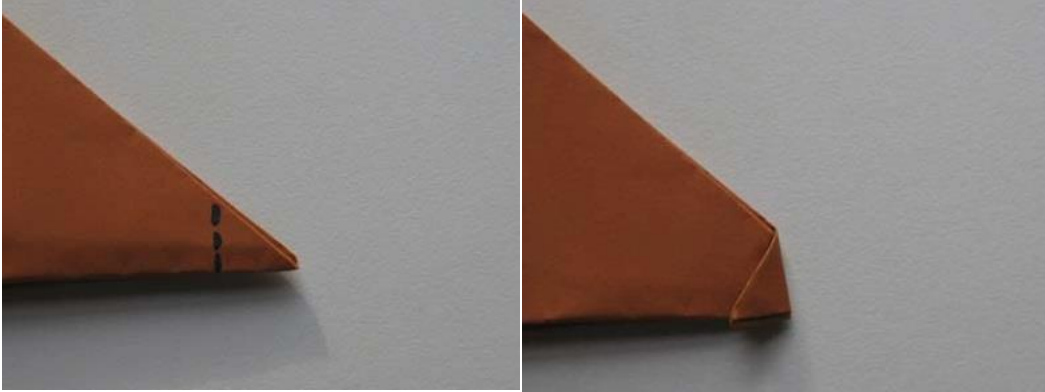
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Origami Fox Step 6: Unfold the crease you just made in Step 5. As you do so, you'll notice that there's actually 3 layers of paper! We're going to make a squash fold on the middle layer to form the face of the fox.



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Origami Fox Step 7: Fold the tip of the tail



Origami Fox Step 8: and your origami fox is complete!



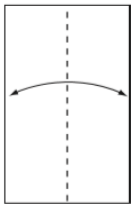
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Origami Jumping Frog:

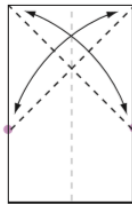


Origami
Jumping Frog

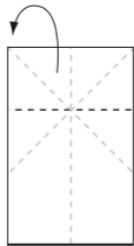
origami-fun
www.origami-fun.com



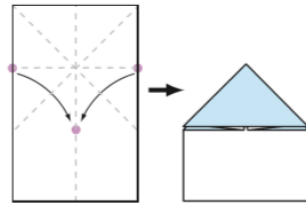
1. Start with a rectangular sheet of paper, white side up. Fold it in half, and open out again.



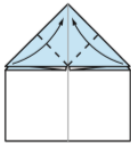
2. fold both top corners to the opposite edge of the paper. Your creases should look like this.



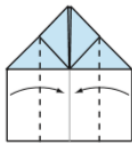
3. Where the diagonal creases meet in the middle, fold the paper backwards, crease well and open.



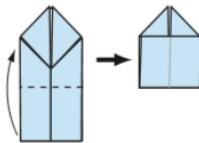
4. Hold the paper at the sides, bring these points down to the centre line, then flatten. The creases should do most of the work here!



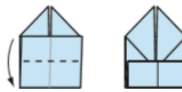
5. Fold the uppermost triangles up to the top point.



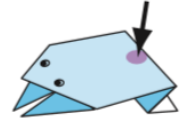
6. Fold sides in to the centre line.



7. Fold bottom of model upwards so the end sits in the centre of the top diamond.



8. Now fold the same part downwards, in half.



9. Turn over and your frog is finished! To make him jump, press down on his back as shown.

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Beaver Paper Model



Beaver • amisk CREE

Wetlands are Wonderful!

Wetlands help keep our drinking water clean.

Wetlands are home to wildlife around the world. This includes one third of North America's threatened and endangered wildlife species.

Wetlands store water during droughts.

Wetlands help to reduce flooding.

Wetlands are important resting, feeding and breeding areas for migratory birds.

When we protect wetlands, we keep the whole planet healthy.

Ducks Unlimited Canada is an environmental charity made up of people who know this. We have worked with others to conserve wetlands since 1938. We know good things happen when people work together!

Get to know your local

îhkatawâwa kihcî tâkwana! (îhkatawâwîpeyâwa)

îhkatawâwa kanâcihtâwak nipiy kâminihkweyahk.

îhkatawâwa ohci pimâcihowak nanâtohk pakwaci pisikiwak kâ-espîhcâk askiy.

mina ôma kîwîtinô kihci-ministik wîkiwak nanâtohk pisikiwak kîkâc kâ mîscinecik.

îhkatawâwa mina miciminamwak nipiy kâ-pâstewaskâk.

îhkatawâwa wîcihtâsiwanwa ekâ kita-eskipek/pastipîk.

îhkatawâwa otâyiwîpîwiniwâw, otâsamisiwiniwâw, mina onôcihtowiniwâw nanâtohk peyîsîsak kâpî kîwehahkik.

kîspin kânâkatohkeyahk îhkatawâwa kiwîcihtânaw kita-miywâyât kikâwînaw askiy misiwe.

Ducks Unlimited Canada kâtoskâtahkik kihayâwewinaw kiskîyîtamwak ôma. aspin ohci 1938 niwîcihânânîk kotakak kita nâkatohkîyîah îhkatawâwa ekâ kita wanihtâyahk. kikiskîyîhtenaw kahkiya kîkway miyo atoskemakan kâ mâmawi wîhkôyahk.

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wetlands - you will love them!

kakwe pisiskîhta ihkatawâwa
wâsakâm, ekota ohci
ka-mâci-sâkihtân.

Create
your own
wetland world

ihkatawâwa
kiskinohamâsôwin!



Ducks Unlimited Canada
Conserving Canada's Wetlands

Active by nature.

education.ducks.ca
(English only • ayâkîsimowin pôko.)



Beaver

"Busy as a beaver" is an old saying with a lot of truth. Beavers dam up streams to create wetlands and build large homes of logs and mud, called lodges. They appear to be at work all the time. Perhaps that is why some of Canada's First Nations believe the beaver helped to build the earth.

Amisk

"canawîw tâpiskoc amisk" kayâs itwewin mâna kâtâpwemakahk. amiskwak mâna osîhtâwak oskwatima ekwa misiwâskahikana sîpîhk ehapacihtâcik asiskiy ekwa mîtosâ kita meshahkik oskwatim ahpô wîkiwâwa. kapiyi mâna atoskewak. eyako mâna ohci îyiniwak kâ itwecik amisk eki wîcihtâsot kikâwinaw askiy kâki osihtâhk.

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We all recognize the beaver by its wide flat tail which helps it balance on land when it is cutting down trees or dragging them over land to build or repair its dam or lodge or simply to have as a snack. That's right - the beaver's main food is the bark and twigs of trees! The beaver's tail also helps it to steer itself when swimming. This is important since the lodge has underwater entrances. These make it difficult for a predator to sneak up on the beaver or its family.

To create your own animal model

follow the steps on the back page. But wait, wetlands are full of life! There are other creatures in this series, each with its own story. Visit our website at education.ducks.ca to download other wildlife models. Then you, your family or friends can create more creatures and even build your own wetland.

semâk kinistawinawânaw amisk kâhayakaskâyik mîna kânâpakâyik osoy.

osoy mina ewicilikot kâ nepwit mîtosâ kâ kawamât ahpo kâpimitâpît ôma kâwi mesahâk oskwatim ahpo mîna kâwi mamîcisot. tâpwe, amisk omiciwiniw wayakîskwa mîna watapîya. amisk osoy mîna wîchikiw kâpimapôyot. eyako apacihikiw osâm iskwahtema ehayâyiki atamipîhk ekâ kotakayi pisikiw kita kîmoci pihokwet.

kita osihtamasoyan ki amiskohkân

pimitisaha anima kâ masinahikâtek otahk oma masinahikan. cîskwa, sakaskinew pimâtisiwin îhkatawâhk. kotakak mina pisikîsak îhtakowak, wîstatwâw ayâwak tipiyaw acimowins. pekihokawinân ôta mâmawi ayapîhkîwasinahikanihk education.ducks.ca kotakak mîna pisiskîsak kâhki nihtâwatâwak ikota ohci kita osihtamâsoyan pisiskîhkânîsak. kiya mîna kitotemak kâhki osihtanâwâw îhkatawâw. kîspin peyak pisikîsîs kitayimihik kotak nawac ewicisit nawasôn.

Working Together
Wîcihtowin

TEACHERS This series is part of Project Webfoot's Wetlands and the World series, designed to explore wetlands across cultures and provide resources for English language literacy development. For more information and teaching ideas, please see the Teachers' Guide or visit our website at education.ducks.ca



Ducks Unlimited Canada
Conserving Canada's Wetlands

Ducks Unlimited Canada Thanks:

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Toronto District School Board



Ramsar Convention Secretariat



ICE

Indigenous Cooperative on the
Environment (ICE)

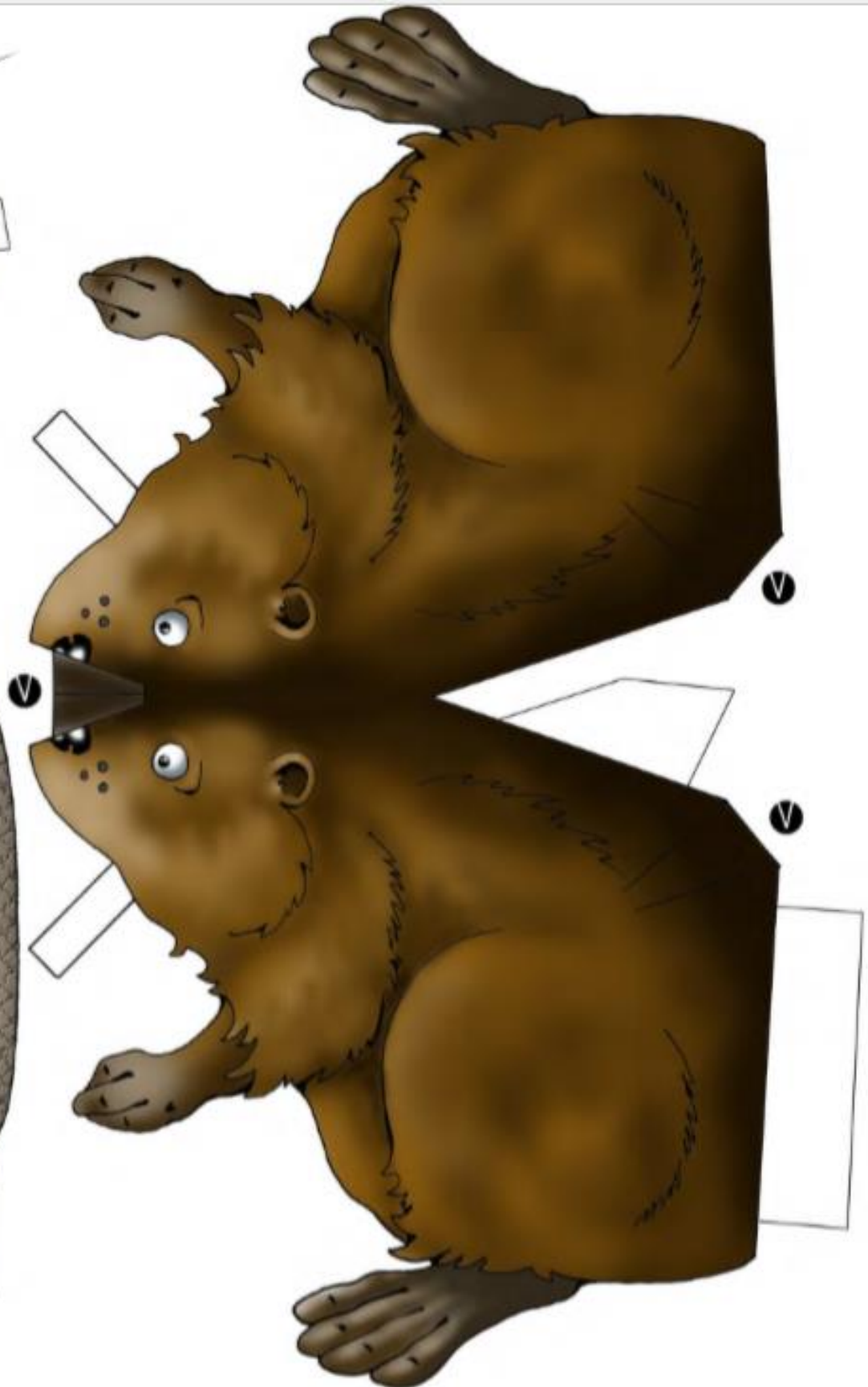


RBC Foundation

Thanks:

Kevin Lewis, Blue Quills First Nations College,
Bill Sluiman

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Graphics & Design: Maria Stewart

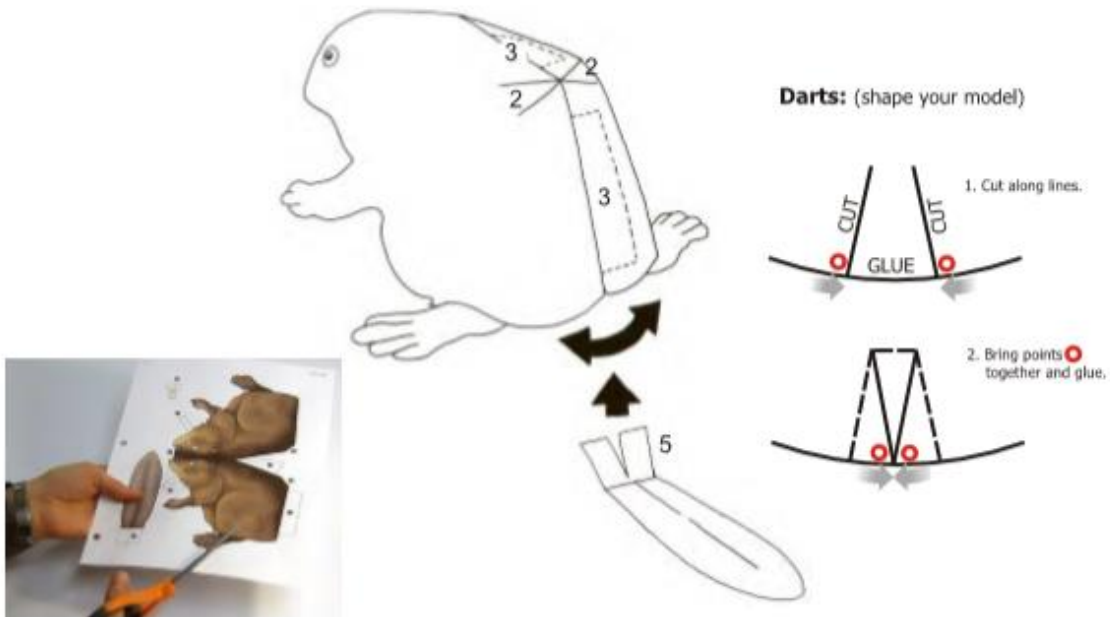
Animal Models: Robert 'van Nood', based on an original concept by Monica Zingali, Ramsar Convention Secretariat.



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To make your paper model

You will need: scissors, glue for paper (glue sticks work well)



2. Cut and glue the 3 darts on the body and head.



3. Glue back together using tabs.



4. Overlap and glue chin tabs.



5. Cut tail tab in half. Glue tail to body. (see B)



6. Cut teeth tab along line and glue in place.

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Frog Paper:



Leopard Frog • 참 개구리 KOREAN

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Get to know your local wetlands - you will love them!

습지대는 경이롭습니다!

습지대는 우리의 마실 물을 깨끗하게 지켜줍니다.

습지대는 전세계 야생 생물의 서식지입니다. 이곳은 멸종의 위협을 받고 있는 북미 야생종의 3분의 1이 서식하는 곳이기도 합니다.

습지대는 가뭄동안 물을 저장합니다.

습지대는 홍수를 예방합니다.

습지대는 철새들이 이동할 때 중요한 번식과 휴식장소이기도 합니다.

우리가 습지대를 보호해야 지구 전체를 건강히 보전할 수 있습니다.

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여러분이 살고 있는 지역의 습지대를 관찰하십시오 - 곧 습지대를 사랑하게 될 것입니다!

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Create your own wetland world
습지대 세계를 만들어 보십시오

Leopard Frog

Frogs appear in fairy tales from many countries - usually telling a tale of a handsome hero changed into a frog and only able to be changed back by magic. Perhaps this is because the frog's life is one of magical changes. The frog starts out its life as part of a gooey mass of eggs attached to a plant stem underwater. The egg hatches into a tadpole which lives in water but then starts to grow legs, eventually becoming a completely different creature - a frog which can hop and move over land.

There are many kinds of frogs in the world and they all depend on water for part of their life. The leopard frog is one of the most common frogs in Canada. It feeds on insects, crustaceans and sometimes other frogs. But, of course, frogs and tadpoles are food for fish, birds, raccoons and other animals.

To create your own animal model

follow the steps on the back page. But wait wetlands are full of life! There are other creatures in this series, each with its own

참 개구리

많은 나라에서 개구리는 대체로 잘생긴 주인공이 개구리로 바뀌고 마법에 의해서 사람으로 돌아오는 이야기가 담긴 동화속에 등장합니다. 아마 개구리의 생애가 마법과 같은 변화를 거치기 때문일것입니다. 개구리는 물속 나무 줄기에 붙은 끈적끈적한 한덩어리 알의 상태로 생명이 시작됩니다. 알은 물속에서 올챙이로 부화하며 다음에는 다리가 자라기 시작하여 마침내 땅 위에서 뛰고 움직일 수 있는 완전히 다른 생물체인 개구리가 됩니다.

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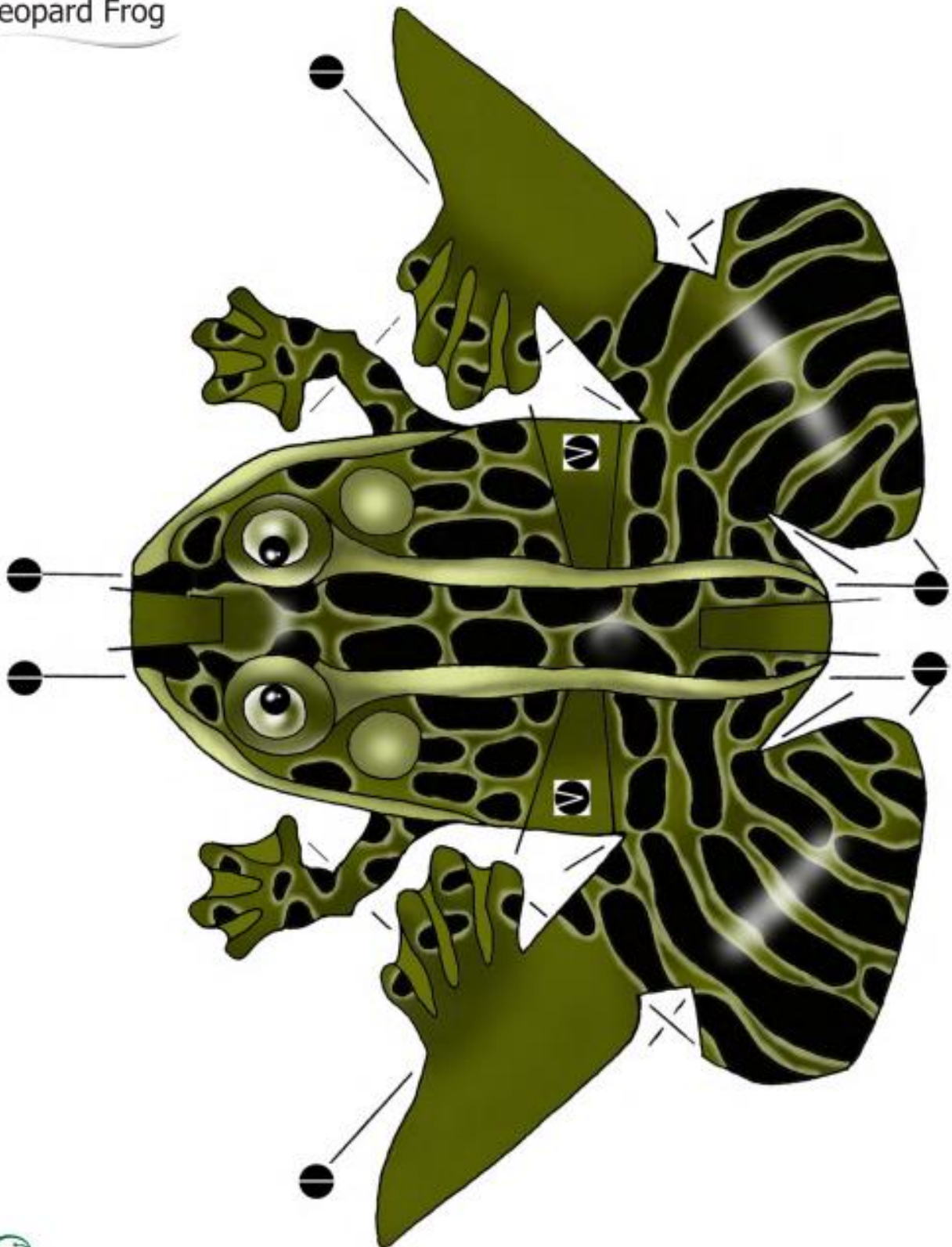
education.ducks.ca를 방문하십시오. 그런다음 여러분의 가족과 친구들과 함께 더 많은 생물을 찾아내 보시고 여러분 자신만의 습지대도 만들어 보십시오.

story. Visit our website at education.ducks.ca to download other wildlife models. Then you, your family or friends can create more creatures and even build your own wetland.

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Leopard Frog

Animal Models: Robert Van Nieuw, based on an original concept by Monica Zinsgl, Kansas Convention Secretariat. Graphics & Design: Maria Sewell. mrs-ed-2008



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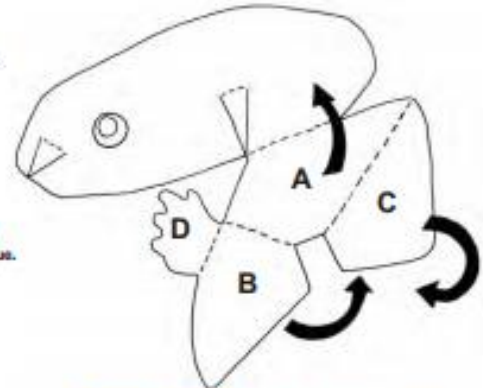
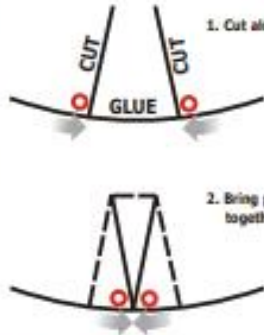
To make your paper model

You will need: scissors, glue for paper (glue sticks work well)

Darts: (shape your model)



1. Cut out all pieces.



2. Cut darts (nose, rump and sides).



3. Fold along both sides of back from eyes to top of the rump dart.



4. Glue nose, rump and side darts



5. Fold back legs (see A) up towards body along line.



6. Fold hind leg pieces down at point where spots stop.



7. Fold top part of leg piece "C" over leg piece "A" and glue.



8. Fold leg piece "D" and front legs to position frog.