Family edition

Frog Dissection: Open the Frog the Right Way

Ages 11-14 · about 45 minutes, in one sitting

Your child does the first half of a frog dissection on a computer, in the same order and with the same tools as the lab at school: looking the frog over, opening the mouth, then cutting the skin and the muscle under it one layer at a time. There is no blood: the frog is a drawing of a preserved specimen.

What you need

- A computer or Chromebook with a current browser and a mouse or trackpad.
- The lesson link: mytekdev.com/try/dissectionlab?lesson=open-the-frog&ref=fam-dissectionlab-1. No account, no email and nothing to install.
- Optional: the activity sheet at the end of this plan, printed, and a pencil.

Before you start: try it once yourself

Open mytekdev.com/try/dissectionlab?lesson=open-the-frog&ref=fam-dissectionlab-1. A male leopard frog lies on the tray, back up, and the probe is in hand. The Lab tab shows step 1, Look at the outside.

1. **Name the outside.** Touch the round disc behind an eye with the probe: the card names the tympanic membrane. Find the eye, the cloudy third eyelid, the nostrils and the small opening at the back end. Press `Turn over` for the belly.
2. **Sex it.** Look at the first finger of each hand: a dark pad. On the Lab tab choose male and tick the pads.
3. **Open the mouth.** Press `Close up on the head`, take the `Scissors` and snip each corner of the jaw on its mark. Press `Look in the mouth`: find the tongue, the teeth and the patches on the roof.
4. **Pin and cut the skin.** Back on the tray, put a pin through each limb. With `Forceps` click the skin where a line starts, then drag the `Scissors` along it. Do all five lines, drag each flap outward with the forceps and pin it.
5. **Cut the vein, on purpose.** Now drag the scissors straight down the middle of the muscle without lifting it. The message names the vein and what lay under it, and offers `Undo`. Undo it, and press the cuts undone count under the tray to read the log.
6. **Open the body wall.** Lift the wall, cut beside the dark line, then across at the arms and the legs. Open and pin both flaps: the organs show.

> The moment that lands is the cut vein and the log that keeps it. Let your child reach it alone; do not warn them off.

The ideas, in plain words

A frog's belly is closed by two layers: the skin, and under it the muscle of the body wall. A dissection opens them one at a time, each lifted with forceps before it is cut so the blade does not reach what lies beneath. Down the middle of

the inner face of the body wall runs the ventral abdominal vein, carrying blood from the hind legs forward to the liver, so the handouts send the cut through the wall a little to one side of the middle line. The app follows that order and those lines, and logs every cut, undone or not, for the teacher to read.

The app's frog is a preserved leopard frog drawn from public domain anatomy plates and checked against published lab manuals; every line it says about a part comes with its sources. Many states let a child choose an alternative to dissection; used in full, the app is built to be that alternative, and this lesson is its first period.

Do it together

1. Open mytekdev.com/try/dissectionlab?lesson=open-the-frog&ref=fam-dissectionlab-1 together. A short guide opens over the app. Your child touches the eardrum behind the eye with the probe, turns the frog over, and opens the Sheet tab.

   > **You'll know it worked when:** A card says what the eardrum is and how your own compares.

2. Work down the Lab tab to step 3: snip the two corners of the jaw and look in the mouth.

   > **If you get stuck:** The mouth does not open: both corners need a snip, on the marks.
   >
   > **You'll know it worked when:** The tongue is fixed at the front of the mouth, not the back.

3. Pin the frog belly up, lift the skin with the forceps, cut along the lines with the scissors, and pull each flap back.

   > **If you get stuck:** A flap will not open: it says which cut is still missing.
   >
   > **You'll know it worked when:** Two flaps pinned back, full of tiny blood vessels.

4. Cut the muscle the same way, beside the dark line down the middle. Ask what would happen if the cut went on the line.

   > **You'll know it worked when:** Your child can say the dark line is a vein, and a cut on it would cut the vein.

Talk about it

Ask these while your child works. A child who has understood the lesson can answer them without help:

- Where is the frog's eardrum, and where is yours?
- Where is the frog's tongue attached, and how does that help it catch food?
- Why do you lift the skin before you cut it?
- What is the dark line down the middle of the body wall?
- Why does the cut through the body wall go beside the middle line and not on it?

> The last question is the real test: a child who answers it has connected where a part lies with how the lab is done.

For younger and older kids

Younger: For a younger child, open Setup and choose middle school with a word bank, and stop after the skin.

Older: For a teenager, choose high school in Setup and continue to step 7, the chest.

Keep going

- Open the chest (step 7) and find the heart under the girdle.
- Explain why the two halves of the body wall meet where their own cut ran, not on the middle line.
- Write the order of the cuts as numbered instructions for a younger child.

Bring it into other subjects

- English: write the steps for opening the frog as numbered instructions a fifth grader could follow.
- Math: measure the frog snout to vent on the screen against the tray, and estimate the real length in centimeters (about 10).
- Health: compare the frog's layers with your own: skin, the muscles of your belly, and what they hold in.

For your records

Ready to copy into an hour log, a portfolio or a transcript.

LESSON	Frog Dissection: Open the Frog the Right Way
SUBJECTS	Science, Life science
TIME	45 minutes
WHAT WE DID	Did the first half of a virtual frog dissection in the lab's order. Named the outside parts, opened the mouth, and cut the skin and body wall as separate layers.
SKILLS PRACTICED	Frog anatomy; Following a multistep procedure; Comparing a frog with a person

Activity sheet (optional)

Name: _____ Date: _____

Open the app: scan the QR code, or go to mytekdev.com/try/dissectionlab?lesson=open-the-frog

Essential question: Why does a dissection go one layer at a time?

1. **Look first.** Name four outside parts with the probe. Write two of them and what they do.

2. **Open the mouth.** Snip both corners of the jaw. Where is the tongue fixed?

3. **Cut the skin.** Lift the skin with the `Forceps`, cut along the lines with the `Scissors`, open and pin both flaps.
4. **Cut the body wall.** Cut beside the dark line. What is the dark line?

1. Why do you lift each layer before you cut it?

2. How many cuts did you undo? Which one taught you the most?

Quick check

Name: _____

1. Which layer is cut first? (A) the body wall (B) the skin (C) the liver

2. The dark line down the middle of the body wall is (A) a nerve (B) a vein (C) a muscle

3. Where is a frog's tongue fixed, and where is yours?

Answers

QUESTION	ANSWER	WHY
1	B	The skin is on the outside; the body wall is the muscle under it, and the organs are under that.
2	B	It is the ventral abdominal vein, which carries blood from the hind legs to the liver.
3	A frog's tongue is fixed at the front of the mouth; yours is fixed at the back.	The frog's flips out to catch prey.

If your state or umbrella school asks, this lesson covers NGSS MS-LS1-3, Common Core ELA RST.6-8.3, Common Core ELA RST.6-8.4.

Dissection Lab and this plan are made by MYTEK Lab. The frog is drawn from public domain anatomy plates: Alexander Ecker, The Anatomy of the Frog (1889), and J. D. F. Gilchrist and C. von Bonde, Dissection of the Platana and the Frog (1919).

Terms of use

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The app this lesson uses is free and runs in the browser, with nothing to install and no account needed. It is at mytekdev.com.

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