



Viscera and Villains

7TH GRADE CO-OP EDITION • FREE SAMPLE

A TurnipInk curriculum: every lesson is a case to crack.

A weekly co-op science class where every lesson is a case

WHAT THE FULL PRODUCT INCLUDES

- 29 lessons in 3 units, each built around a mystery case
- 29 open-and-go Lesson Plans and Scripts, each with a Materials and Prep sheet
- 29 student worksheets, one per lesson
- Printable cards, kits and reveals for the in-class activities
- 27 short Pre-Read articles to send home before class
- 29 Home Take-Home activities to send home after class
- Letter to Families and Course Syllabus, and a Teacher's Guide

These are sample pages. The full Case Files, parent scripts and answer copies come with purchase.

Name _____ Date _____

THE CHARGE

Customs (the border officers who check cargo) caught a man in a velvet coat at the harbor: The Mimic, forger of fake life. His suitcase held five sealed jars, labeled only A to E. Four are his decoys: fakes he built to act alive and trick us. One holds something really alive, smuggled across the border to be let loose in a protected place. The Mimic isn't talking. Your job: find the living jar, prove it, and identify what's inside before it's released.



THE MIMIC



EXHIBIT: THE SEIZED SUITCASE

He builds costumes of life: things that move, grow and react. Don't let a costume fool you.

Name _____ Date _____

YOUR PREDICTION

First look: which jar do you think holds the smuggled life? Why?

THE SPECIMEN LOG

At each station, look at the jar and read its Customs Lab Report card. Fill its row: what might fool you about this jar, which test on the card decides it (and what that test showed), then circle your verdict.

Your trio starts at the jar your teacher gives you, then moves to the next letter (after E, go to A).

JAR	WHAT MIGHT FOOL YOU ABOUT IT?	WHICH TEST DECIDES IT? WHAT DID IT SHOW?	CIRCLE YOUR VERDICT
A			Living Once living Never living
B			Living Once living Never living
C			Living Once living Never living
D			Living Once living Never living
E			Living Once living Never living

Name _____

Date _____

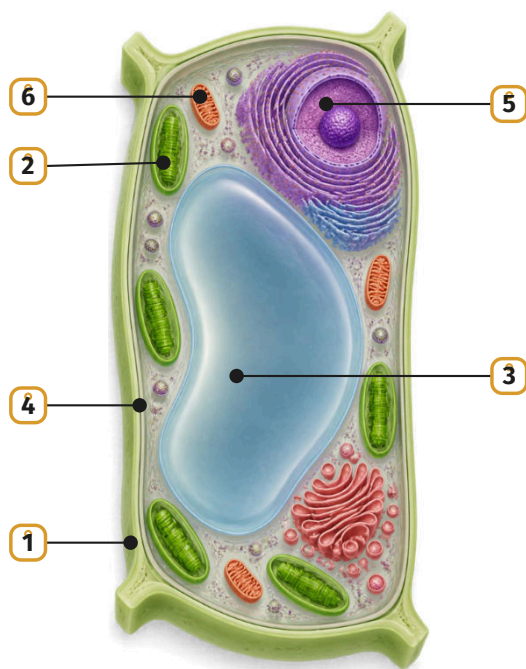
TWO KINDS OF CELLS

READ THIS FIRST

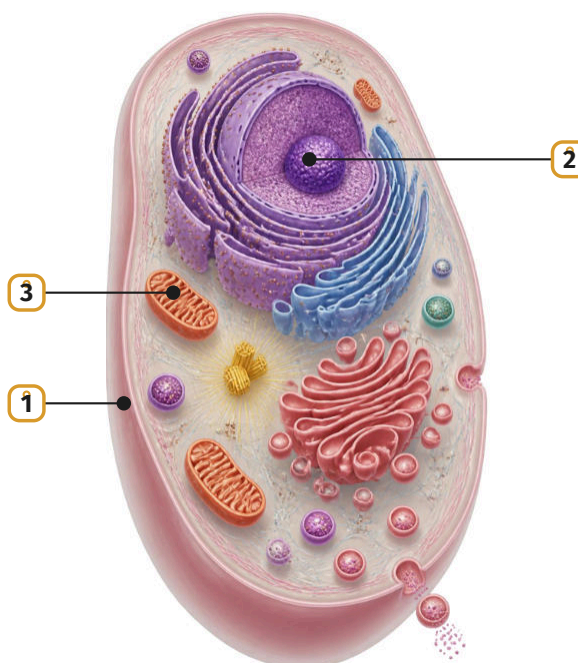
CELL WALL: a stiff outer layer around a plant cell, outside the membrane. It's what keeps a plant cell's shape even when the cell inside is soft.

CHLOROPLAST: a small green structure where a plant cell makes its own food from sunlight.

CENTRAL VACUOLE: one large water-filled sac that takes up most of the space inside a plant cell, pressing everything else toward the edge.



PLANT CELL



ANIMAL CELL

PLANT CELL – FILL IN THE NUMBERED BLANKS

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

ANIMAL CELL – FILL IN THE NUMBERED BLANKS

1 _____

2 _____

3 _____

WORD BANK

cell wall • central vacuole • cell membrane • mitochondria • nucleus • chloroplast

(Three of these six words are used on both cells.)

Name _____ Date _____

Three rounds, one microscope per trio. Jobs rotate each round: scope operator, recorder, caller. Every student writes in their own packet.

Round A - Onion Epidermis (plant reference)

A thin peel from the skin of an onion, wet-mounted on your slide.

☐

cell wall

☐

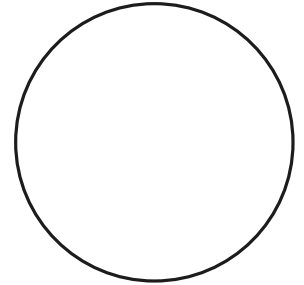
chloroplast

☐

large central vacuole

☐

none of these

*Draw what you see***Round B - Cheek Cells (animal reference)**

A gentle swab from the inside of your own cheek, stained lightly if available.

☐

cell wall

☐

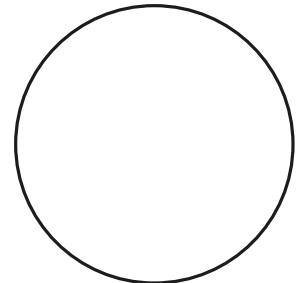
chloroplast

☐

large central vacuole

☐

none of these

*Draw what you see***Round C - Prepared Blood Smear (animal diversity)**

A sealed, commercial prepared slide of an animal or human blood smear. Not a checklist round: just look closely.

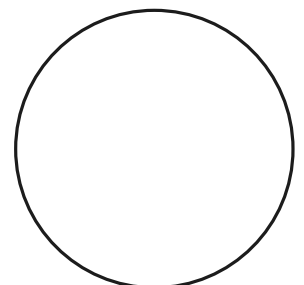
Check every kind of cell you can find on the slide:

☐

a cell with no nucleus

☐

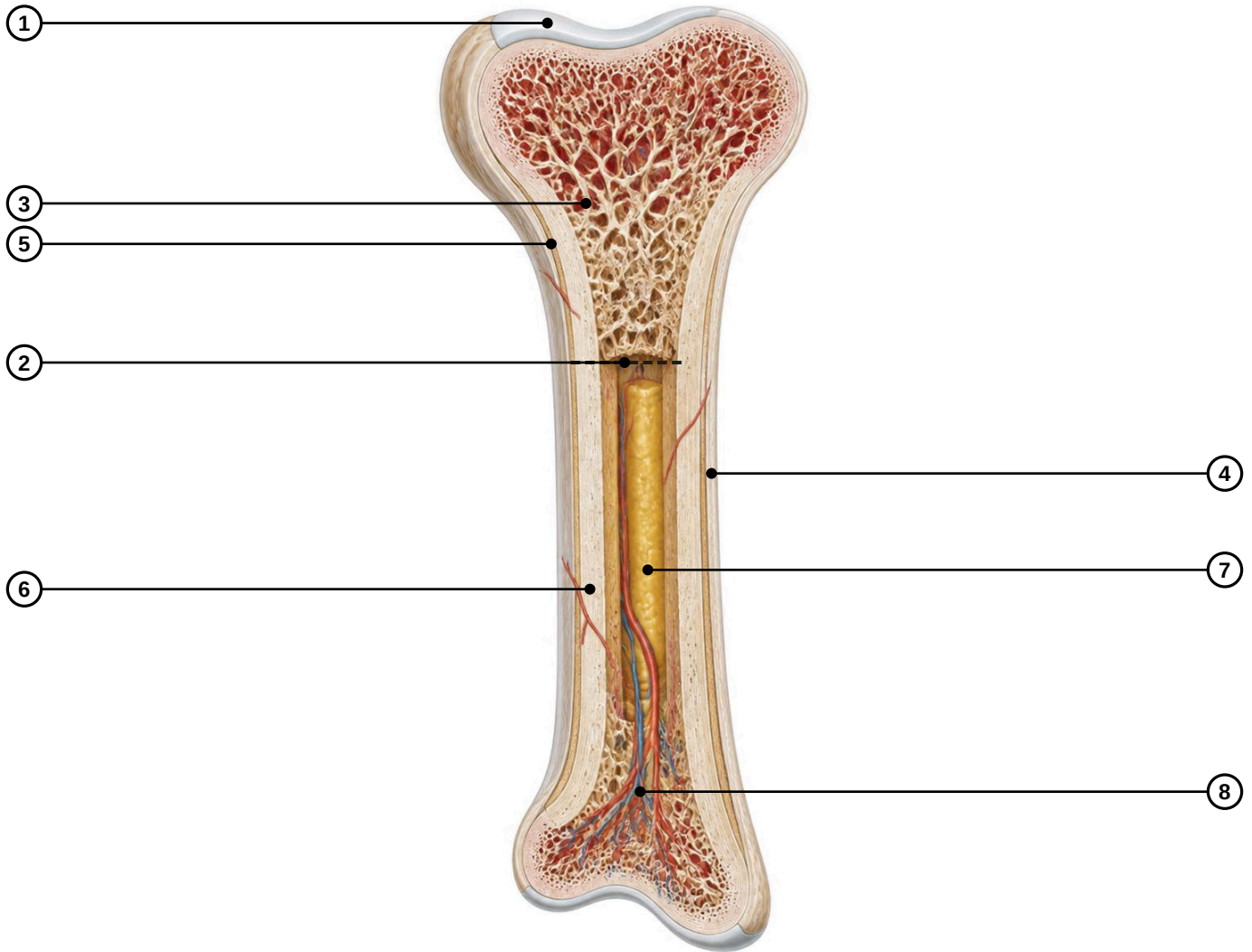
a cell with a nucleus

*Draw what you see*

Name _____ Date _____

INSIDE A LONG BONE

A thigh bone (femur) cut open down its length. A thin skin wraps the outside, and the hollow middle holds soft tissue. Write the name of each numbered part. Use the word bank.



1 _____
2 _____
3 _____
4 _____

5 _____
6 _____
7 _____
8 _____

WORD BANK

growth plate • articular cartilage • spongy bone • medullary cavity • compact bone •
periosteum • bone marrow • blood vessel

Name _____ Date _____

STOMATA: WHERE ARE THE DOORS?

Leaves have tiny openings in their skin, called stomata (one is a stoma). Your job: find out where on a leaf they are.

WHAT YOU'RE LOOKING FOR: one stoma, zoomed in. Yours will look smaller and fainter.

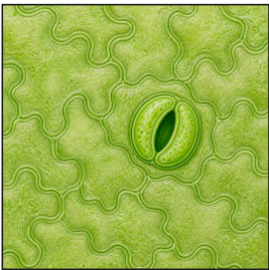


Illustration: supplied by your teacher.

- 1 Touch the edge of each painted square. It must be dry, not sticky.
 - 2 Mini test 1: put one drop of water on the TOP of your leaf, away from the polish, and one drop on the BOTTOM. Watch what each drop does.
 - 3 Mini test 2: hold your leaf up to the lamp and look through it.
 - 4 Press a strip of clear tape onto the TOP square. Peel it off slowly: the polish comes off with it. Stick it flat on a slide labeled T. Do the same with the BOTTOM square on a slide labeled B.
 - 5 At the microscope, find the peel at 100x, then switch to 400x. Look for tiny mouth shapes: two bean-shaped cells around a slit.
 - 6 Count the mouth shapes in ONE field of view on each slide. Write your counts, then sketch one mouth shape.
- 1 Mini test 1: what did the drop do on the TOP? On the BOTTOM?
- 2 Mini test 2: what pattern did you see running through the leaf?

SLIDE	MY COUNT (one field, 400x)	MY GROUP'S COUNTS	SKETCH ONE (400x)
TOP (slide T)			
BOTTOM (slide B)			

Which side of the leaf had more stomata? TOP BOTTOM ABOUT THE SAME

3 YOUR IDEA: why might it help a leaf to keep most of its stomata on the side you circled?

Name _____

Date _____

INSIDE A LEAF

Fill this page from your peel, your mini tests, your disks and your teacher. A leaf, cut straight across and seen from the side. Label it from the word bank.

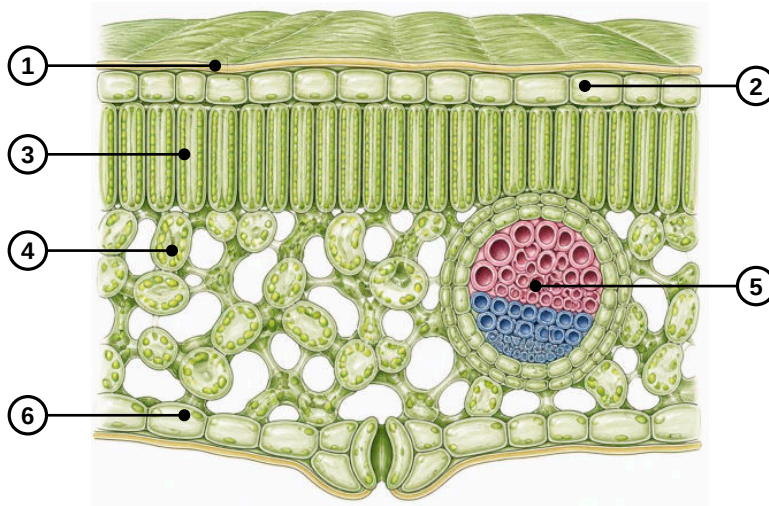


Illustration: supplied by your teacher.

1	_____
2	_____
3	_____
4	_____
5	_____
6	_____
7	_____
8	_____

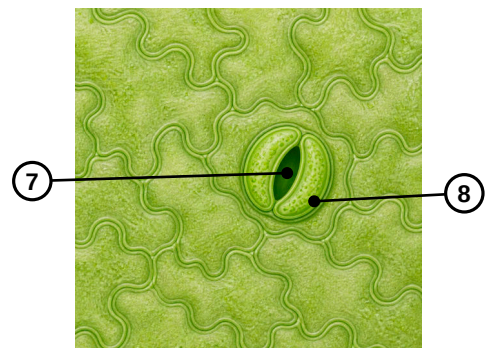
WORD BANK

• upper epidermis • cuticle • palisade layer • lower epidermis • spongy layer
• vein • stoma • guard cell

PART	ITS JOB
Cuticle	
Stoma	
Guard cell	
Palisade layer	
Spongy layer	
Vein	

ZOOMED IN: THE BOTTOM OF THE LEAF

One opening in the lower epidermis, seen from below.

**WHERE THE DOORS ARE**

Most stomata are on the _____ of a leaf, where it is _____ and cooler, so less water escapes.

The gas from your leaf disks filled the air spaces in the _____ layer.

The Second Wind

Unit 2: Anatomy

CASE FILE

012

Materials and Prep

☐ Start Ahead

3 days before

Buy 12 WHOLE raw chicken wings. Party-cut wings usually have the shoulder joint and the tip removed, and both are labels on the outside diagram. If whole wings cannot be found, make sure at least your demo wing is whole and tell the class those two labels are 'demo wing only'.

2 days before

Wings into the fridge to thaw fully. They must be completely thawed and pliable: a part-frozen wing will not peel.

☐ Ready Before Class

- ☐ Night before: split the class by hand, 5 in Group A and 4 in Group B, mixing hand strength across both. Write the names on the Split Card (Teacher Reference) and keep this sheet with 07.
- ☐ Night before: pat the wings dry, one per zip bag, and back into the fridge.
- ☐ Morning of: wings into the cooler with ice packs. Use them within two hours; you handle all raw chicken.
- ☐ Cover every table edge to edge with butcher paper. Nothing goes on it but trays, tools and gloved hands.
- ☐ At each place: a tray, a bagged wing, gloves, a probe and a procedure card. Your demo wing on its own tray at the front. Scissors stay with you.
- ☐ Open the two waste stations (a bag inside a bag) before the lab starts.
- ☐ Set the clothespins, bowls of beans and cups aside: they come out only after the tables are disinfected.
- ☐ Draw the class table on the board: rows Group A and Group B, columns Rounds 1-4, one line per student.

