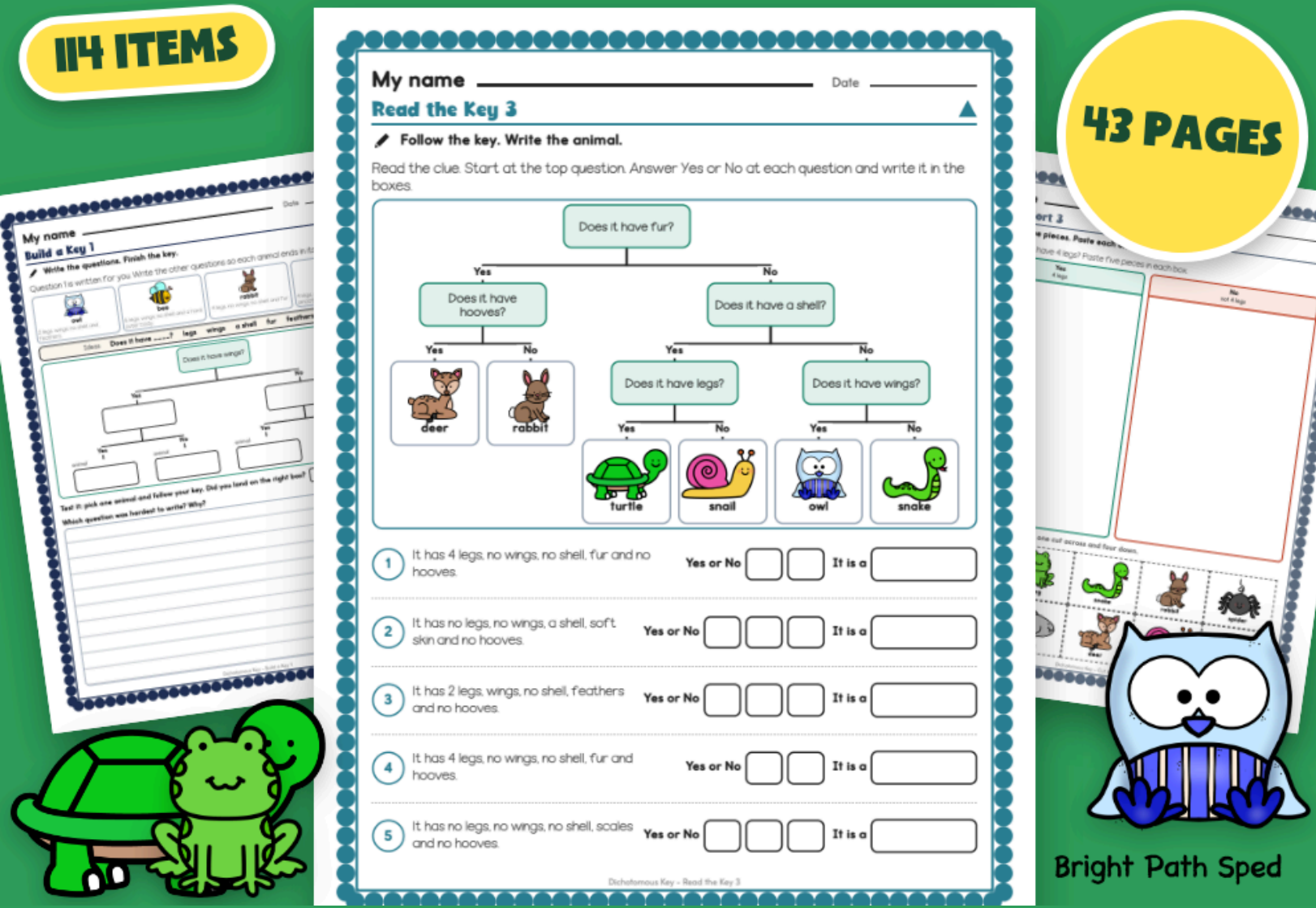
DICHOTOMOUS KEY

READ, BUILD AND SORT - ANIMAL KEYS - GRADES 6-8

114 ITEMS

43 PAGES



Bright Path Sped

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This is a fillable PDF

- Open it in a PDF reader (Adobe Acrobat Reader, Preview, or your browser), click into a line or a box, type, and Save As.
- Every name line, answer box, check box and ruled box on the student pages is a type-in field, and so are the tracker and the other record pages. You can also print any page and write by hand. Print the build pages if you want students to draw their keys with a pencil.
- It works offline, with no account needed.

Print at 100 percent

Turn off fit to page and shrink to fit so the ruled lines stay 0.34 inch apart and the cut pieces keep their size. The animals print in color; a black and white copy reads too because every box carries the animal's name or a question.

Student work

A filled-in tracker, class grid or team note carries a real student's name. Keep it in the data folder.

Need help?

If a field will not behave or a page will not print the way you expect, use Ask a Question on the product page before leaving a review. A fix to the file ships as a free update from My Purchases.

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PREVIEW

Teacher Notes

The parts of a key, the page types in order, and a few teaching notes.

The parts of a key

- **The question box.** Green. It holds one yes or no question. On the build pages it is an empty box to type or write in.
- **The branch.** A line labeled Yes or No. On Build a Key 3 the labels are empty too, so students write them.
- **The leaf.** A card with one animal, an empty box on the build pages, or a dashed glue box on the last cut page.
- **The numbered key.** The same tree as steps. Step 3a means the answer to step 3 is yes; 3b means no.
- **The cut lines.** Cut pages 1 and 2: 6 pieces, each 2.4 by 1.46 inches. Page 3: 10 pieces, each 1.46 by 1.15. Page 4: 5 pieces, each 1.46 by 1.2, and glue boxes 1.54 by 1.27. Edge to edge.

Page type	What it looks like	What the student does
How a Key Works; Fact File; Words	3 pages, 6 items	A key drawn two ways, the traits of 13 animals, six words to match.
Worked Example	1 page, 2 items	Four steps on a key with the path in red, then a Your Turn.
Read the Key 1 to 4	4 pages, 19 items	A clue, a key, the Yes or No path, the animal. Key 4 is numbered steps.
Split the Group	1 page, 6 items	Count yes and no for five questions and pick the most even split.
Build a Key 1 to 4	4 pages, 14 items	Write the questions. Pages 1 and 2 print the first question; 3 is open; 4 is numbered.
Fix the Key 1 to 3	3 pages, 13 items	A key with bad questions; good or bad questions; animals on the wrong branch.
Claim, Evidence, Reasoning 1 and 2	2 pages, 12 items	Four short scenarios with invented numbers.
Quiz, Short Answer	2 pages, 15 items	Ten choices, then five written answers.
Cut and Sort 1 to 3; Cut and Build a Key	4 pages, 27 items	Fur, feathers or scales; how many legs; 4 legs or not; paste animals onto a key.

Three steps, marked by a shape

- **Circle.** Read the Key 1 (page 9) and Build a Key 1 (page 14): four animals, two questions to write.
- **Square.** Read the Key 2 (page 10) and Build a Key 2 (page 15): five animals, a longer path.
- **Triangle.** Read the Key 3 and 4, Build a Key 3 and 4 (pages 11, 12, 16, 17): six animals, then numbered steps.

Teaching notes

- Say it every day: **a good question has two answers, is not an opinion, and splits the group.**
- Students often write a question about size or color. Fix the Key 1 and 2 ask them to rewrite those. Accept any rewrite that is yes or no and about a trait on the fact file.
- On the build pages every student's key can differ. Use the test line: the student picks an animal, follows the key and checks the box. The sample keys show one right answer.
- The traits are simple and typical on purpose. If your class knows an exception (a legless lizard, a flightless bird), let it start a talk about why a key has to pick a trait that is true for the whole group.

PREVIEW

Preview - Bright Path Sped

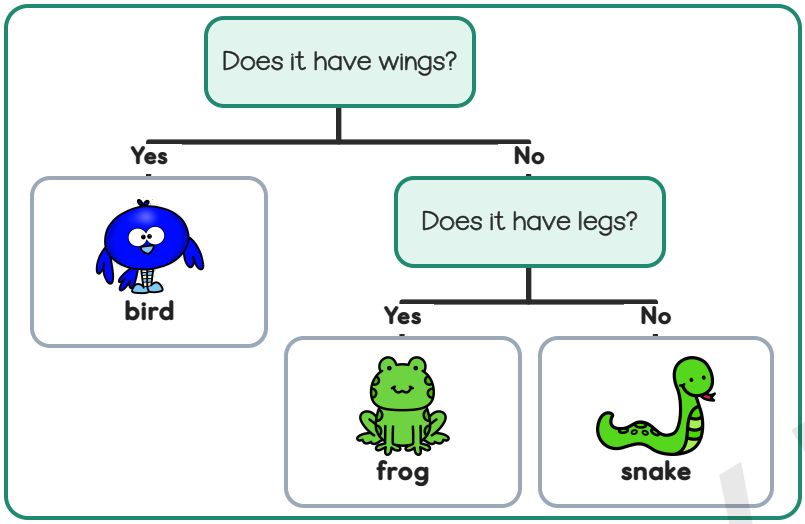
My name _____ Date _____

How a Key Works



Read about keys. Keep this page next to you.

A **dichotomous key** uses yes or no questions to name a living thing. **Dichotomous** means splitting into two. Here is one key drawn two ways: as a tree, and as numbered steps.



Question box. Read it and answer yes or no.

Branch. The line you follow. It says Yes or No.

Leaf. The end. It names one animal.

Trait. Something you can check, like legs or wings.

The same key as steps: a means yes, b means no.

Step	The animal...	Then
1a	It has wings.	bird
1b	It has no wings.	go to step 2
2a	It has legs.	frog
2b	It has no legs.	snake

Follow it. A frog has no wings, so go to 1b. Step 2 asks about legs: a frog has them, so 2a names the frog.

A good question

Yes or no. Every question has only two answers.

The same for everyone. No opinions, such as pretty or cute.

One idea. Ask about one trait at a time.

It splits the group. Some animals go each way.

Does it have wings? Good. Two answers, true for each animal.

Is it pretty? Not good. It is an opinion.

Does it have wings and fur? Not good. It asks about two things.

PREVIEW

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My name _____ Date _____

Key Words

Match each word to what it means.

Write the letter of the meaning in the box.

Dichotomous key	☐	**A**	a feature you can check, such as legs or wings
Branch	☐	**B**	a tool that uses yes or no questions to name a living thing
Leaf	☐	**C**	to sort things into groups
Trait	☐	**D**	a living thing
Organism	☐	**E**	the path you follow after you answer a question
Classify	☐	**F**	the end of a path: it names one living thing

Use two of the words in one sentence.

PREVIEW

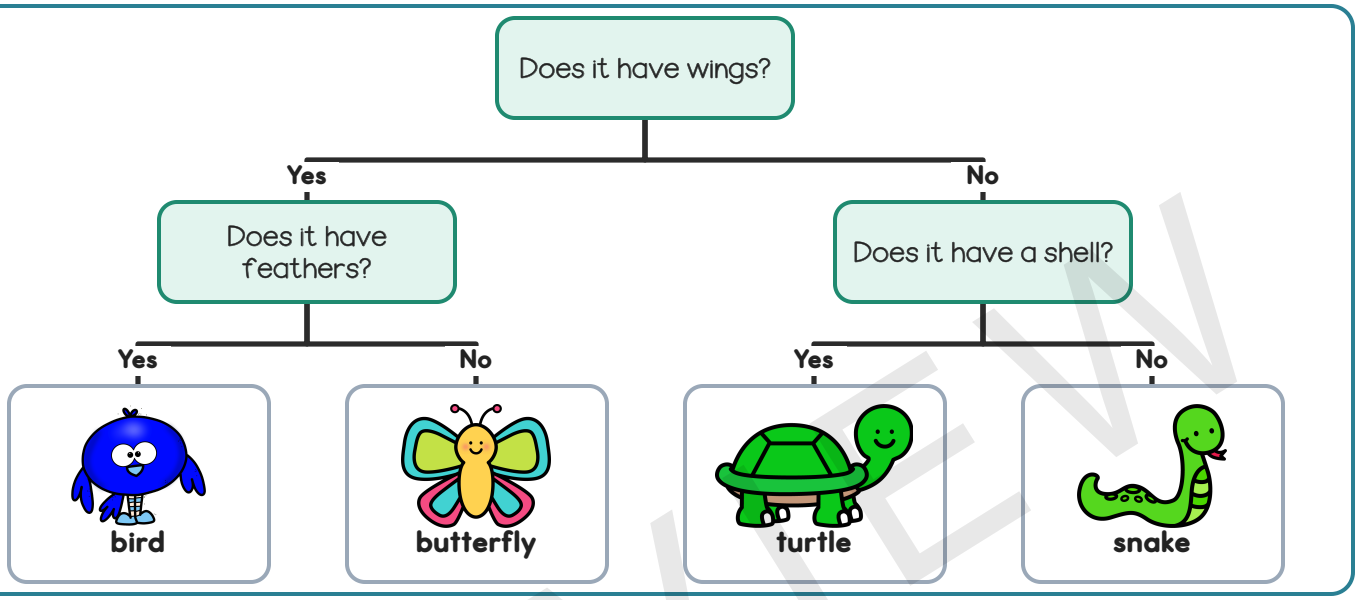
Preview - Bright Path Shed

My name _____ Date _____

Read the Key 1

Follow the key. Write the animal.

Read the clue. Start at the top question. Answer Yes or No at each question and write it in the boxes.



1. It has no wings, a shell and scales. **Yes or No** ☐ ☐ **It is a** ☐

2. It has wings, no shell and feathers. **Yes or No** ☐ ☐ **It is a** ☐

3. It has no wings, no shell and scales. **Yes or No** ☐ ☐ **It is a** ☐

4. It has wings, no shell and a hard outer body. **Yes or No** ☐ ☐ **It is a** ☐

PREVIEW

Preview - Bright Path Sped

My name _____ Date _____

Read the Key 4

Use the steps. Write the animal.

Start at step 1. Say a or b. Go to the step it tells you. Write each step you used, like 1b.

Step	The animal...	Then
1a	It has wings.	go to step 2
1b	It has no wings.	go to step 3
2a	It has feathers.	bird
2b	It has no feathers.	butterfly
3a	It has legs.	go to step 4
3b	It has no legs.	go to step 5
4a	It has 8 legs.	spider
4b	It does not have 8 legs.	go to step 6
5a	It has fins.	shark
5b	It has no fins.	snake
6a	It has smooth skin.	frog
6b	It does not have smooth skin.	lizard

1. It has 4 legs, no wings, scales and no fins. **Steps** ☐☐☐☐ **It is a** ☐

2. It has no legs, no wings, rough skin and fins. **Steps** ☐☐☐ **It is a** ☐

3. It has 2 legs, wings, feathers and no fins. **Steps** ☐☐ **It is a** ☐

4. It has 8 legs, no wings, a hard outer body and no fins. **Steps** ☐☐☐ **It is a** ☐

5. It has no legs, no wings, scales and no fins. **Steps** ☐☐☐ **It is a** ☐

PREVIEW

Preview - Bright Path Sped

My name _____ Date _____

Build a Key 1

Write the questions. Finish the key.

Question 1 is written for you. Write the other questions so each animal ends in its own box.



owl

2 legs, wings, no shell and feathers.



bee

6 legs, wings, no shell and a hard outer body.



rabbit

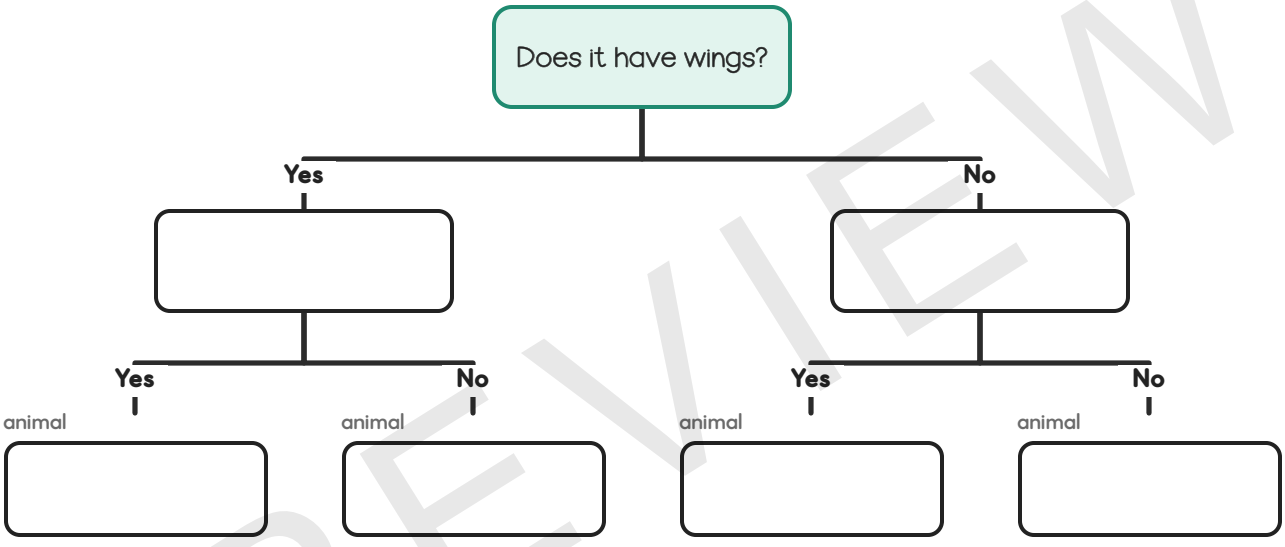
4 legs, no wings, no shell and fur.



frog

4 legs, no wings, no shell and smooth skin.

Ideas **Does it have ____?** **legs** **wings** **a shell** **fur** **feathers** **fins**



Test it: pick one animal and follow your key. Did you land on the right box? ☐ **yes** ☐ **not yet**

Which question was hardest to write? Why?

PREVIEW

Preview - Bright Path Shed

My name _____ Date _____

Build a Key 3

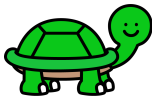
Build your own key. Write every question.

Write every question. Write Yes or No on each branch. Each animal gets its own box.



frog

4 legs, no wings, no shell and smooth skin.



turtle

4 legs, no wings, a shell and scales.



rabbit

4 legs, no wings, no shell and fur.



bird

2 legs, wings, no shell and feathers.



snake

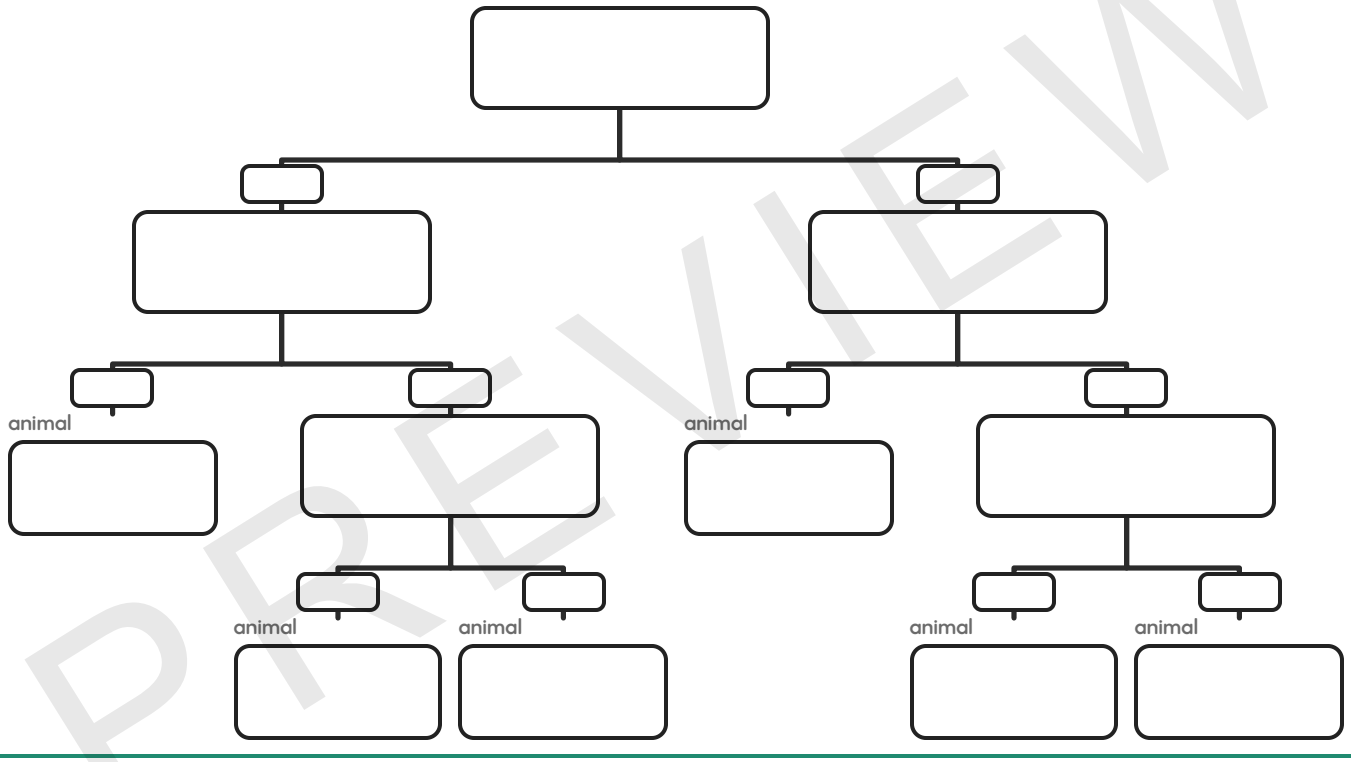
no legs, no wings, no shell and scales.



spider

8 legs, no wings, no shell and a hard outer body.

Ideas **Does it have ____?** **legs** **wings** **a shell** **fur** **feathers** **fins**



Test it: pick one animal and follow your key. Did you land on the right box? ☐ **yes** ☐ **not yet**

Which question was hardest to write? Why?

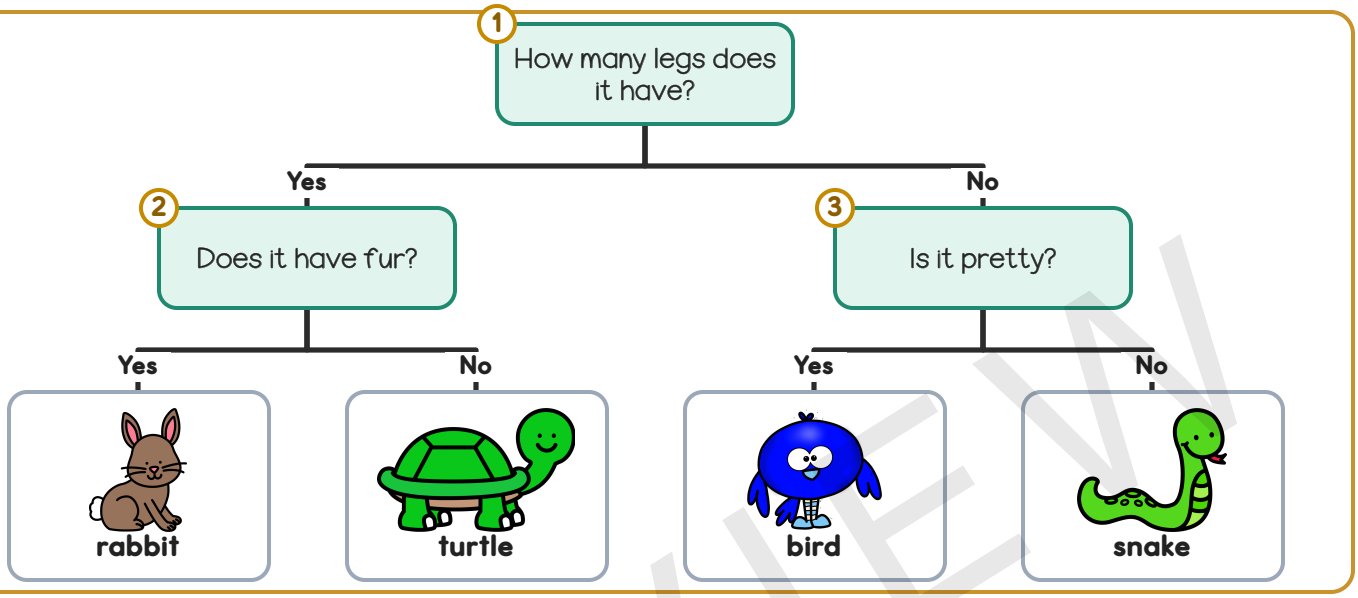
PREVIEW

My name _____ Date _____

Fix the Key 1

Find the bad questions. Fix them.

This key has questions that do not work. Find them. Write a yes or no question that does.



1 Question 1 ☐ good ☐ bad

If bad, write a better yes or no question: _____

2 Question 2 ☐ good ☐ bad

If bad, write a better yes or no question: _____

3 Question 3 ☐ good ☐ bad

If bad, write a better yes or no question: _____

Why is a bad key question a problem?

PREVIEW

My name _____ Date _____

Claim, Evidence, Reasoning 1

Read the facts. Write your claim, evidence and reasoning.

The first question (invented)

A group has 8 animals: frog, bird, snake, turtle, butterfly, spider, rabbit and deer. A student can start the key with 'Does it have wings?' or 'Does it have 4 legs?'. Which should come first?

Claim

Evidence: use the numbers or the traits

Reasoning: why does the evidence fit the claim?

Is it a good question? (invented)

A student writes the question 'Is it big?' for a key. Three classmates answer it for the same deer: Maya says yes, Leo says no and Sam says yes. Is it a good key question?

Claim

Evidence: use the numbers or the traits

Reasoning: why does the evidence fit the claim?

PREVIEW

Preview - Bright Path Shed

My name _____ Date _____

Quiz

Check the best answer for each one.

1. A dichotomous key sorts things using...

   ☐ **yes or no questions** ☐ **only colors** ☐ **guesses**

2. Dichotomous means...

   ☐ **counting by tens** ☐ **splitting into two** ☐ **drawing a line**

3. Which is a good key question?

   ☐ **What does it look like?** ☐ **Is it pretty?** ☐ **Does it have wings?**

4. Which question splits frog, bird, snake and turtle into 2 and 2?

   ☐ **Does it have legs?** ☐ **Does it have 4 legs?** ☐ **Does it have wings?**

5. The end of a branch, which names one organism, is called a...

   ☐ **trait** ☐ **branch** ☐ **leaf**

6. A feature you can check, such as legs or wings, is a...

   ☐ **trait** ☐ **leaf** ☐ **key**

7. A key asks, 'Does it have 8 legs?' The animal has 6 legs. Which branch do you follow?

   ☐ **Yes** ☐ **No** ☐ **Either one**

8. 'What color is it?' is a bad key question because...

   ☐ **it has more than two answers** ☐ **it is too short** ☐ **it has no leaf**

9. Which question has two questions in one?

   ☐ **Does it have fur?** ☐ **Does it have a shell?** ☐ **Does it have fur and a shell?**

10. Why is 'Is it cute?' a bad key question?

    ☐ **it is hard to spell** ☐ **people answer it differently** ☐ **animals cannot be cute**

PREVIEW

Preview - Bright Path Shed

My name _____ Date _____

Cut and Sort 1

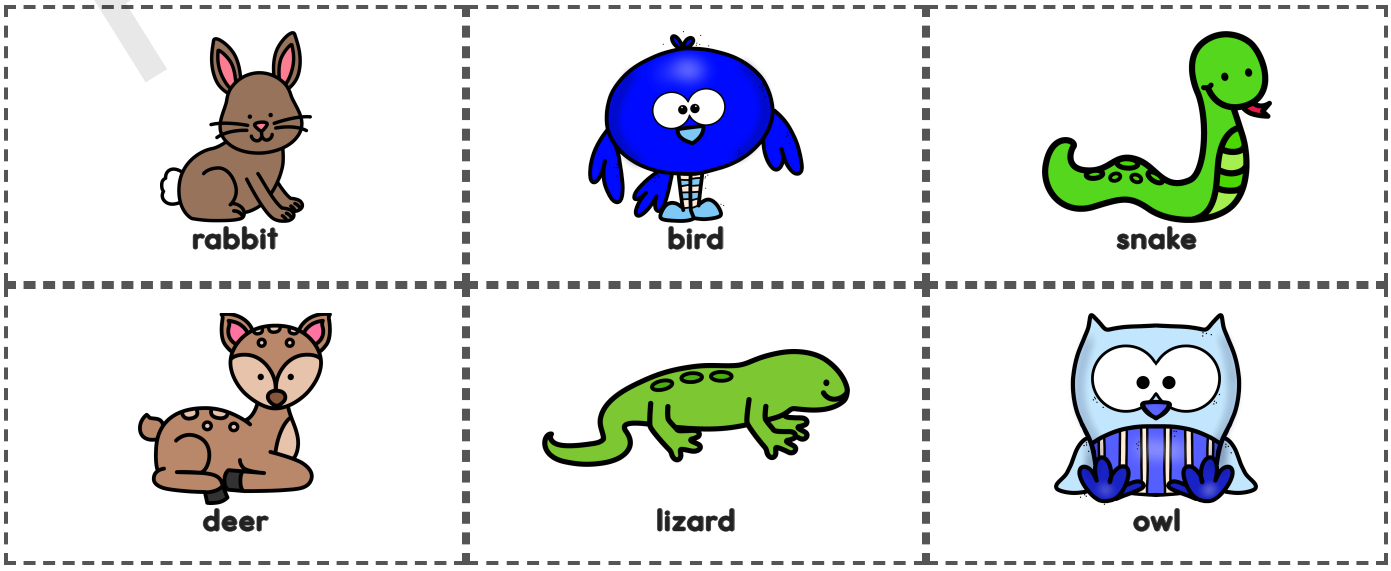
Cut out the pieces. Paste each one in its box.

What covers the animal? Paste two pieces in each box.

Fur soft hair on the body	**Feathers** on a bird	**Scales** small hard plates

PREVIEW

Cut on the dashed lines: one cut across and two down.



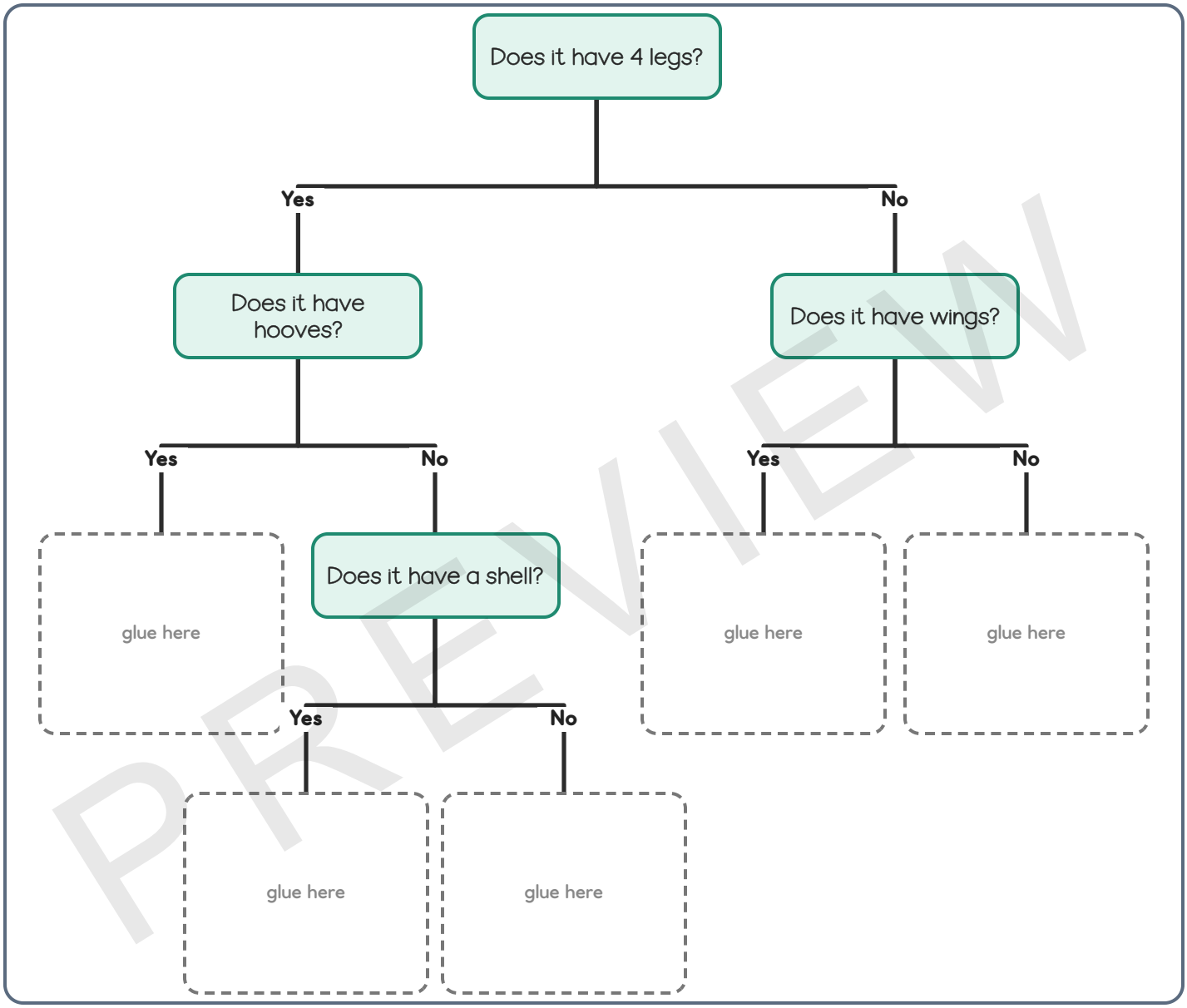
Preview - Bright Path Shed

My name _____ Date _____

Cut and Build a Key

Cut out the pieces. Paste each animal on the key.

Read each question on the key. Paste each animal in the box where the key ends.



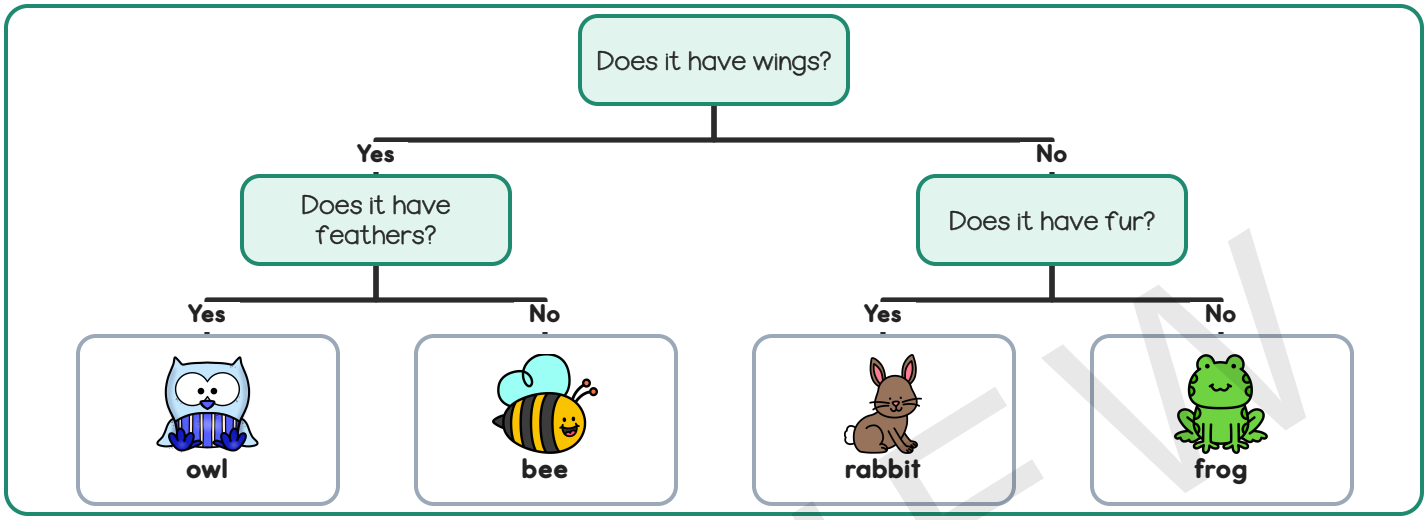
Cut on the dashed lines: four cuts down.



Answer Key: Build a Key 1 and 2

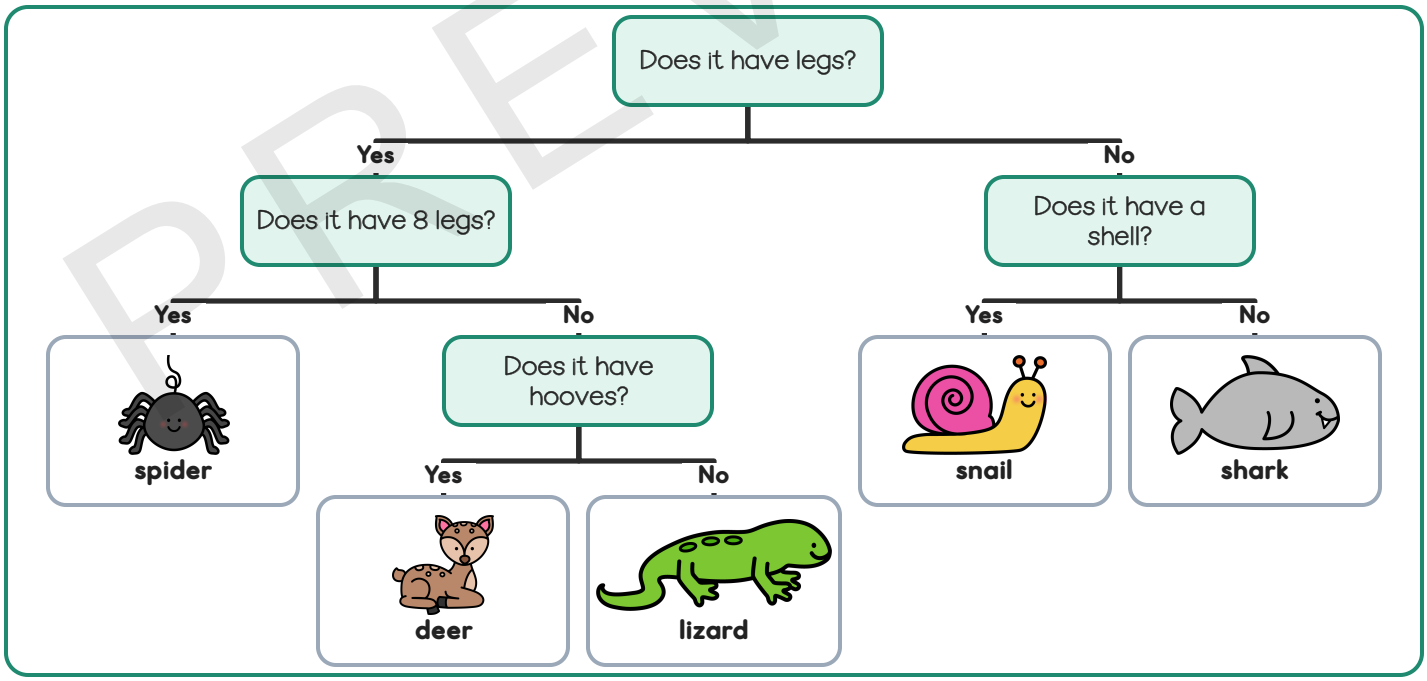
One right key for each page, then every question from the fact file that would also split the pair. Printed labels put the yes animal on the left leaf; a student may choose any question below as long as the animals land in the matching leaf.

Build a Key 1 page 14: sample key



Animals to split	Questions that work (the yes animal on the left leaf)
owl and bee	Does it have 6 or more legs? (yes: bee); Does it have feathers? (yes: owl)
rabbit and frog	Does it have fur? (yes: rabbit); Does it have smooth skin? (yes: frog)

Build a Key 2 page 15: sample key



Animals to split	Questions that work (the yes animal on the left leaf)
spider, deer, lizard	Does it have 6 or more legs? (yes: spider); Does it have 8 legs? (yes: spider); Does it have fur? (yes: deer); Does it have scales? (yes: lizard); Does it have hooves? (yes: deer)
deer and lizard	Does it have fur? (yes: deer); Does it have scales? (yes: lizard); Does it have hooves? (yes: deer)
snail and shark	Does it have a shell? (yes: snail); Does it have fins? (yes: shark)

PREVIEW

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Answer Key: Words, Worked Example, Split and Fix the Key

Every value was computed from the fact file or the page's own data.

Key Words page 7

Word	Letter
Dichotomous key	B
Branch	E
Leaf	F
Trait	A
Organism	D
Classify	C

Worked Example page 8

Animal	Yes or No, in order	Part
spider	No, Yes, Yes	example
frog	No, Yes, No	your turn
snake	No, No	your turn

Split the Group page 13

Question	Yes	No	Even?
Does it have wings?	2	6	no
Does it have 4 legs?	4	4	yes
Does it have legs?	7	1	no
Does it have fur?	2	6	no
Does it have a shell?	1	7	no

Best first question

Does it have 4 legs? It splits the 8 animals into 4 and 4. The others leave 1 or fewer on one side.

Fix the Key 1 page 18

#	Is it	Why
1	bad	It has more than two answers. A key question must have only yes or no.
2	good	-
3	bad	It is an opinion. Different people answer it differently.

Fixed questions for Fix the Key 1

Question 1: **Does it have 4 legs?** Question 3: **Does it have wings?** Accept any yes or no question about one trait that splits the animals the same way.

Fix the Key 2 page 19

#	Is it	A better question
1	good	-
2	bad	A key question has only yes or no. Try: Does it have fur?
3	bad	That is an opinion. Try: Does it have a shell?
4	good	-
5	bad	That is two questions in one. Ask one: Does it have wings?

Fix the Key 3 page 20

#	As printed	Correct branches
1	right	Yes: **turtle**, No: **snake**
2	wrong	Yes: **owl**, No: **rabbit**
3	right	Yes: **spider**, No: **bee**
4	wrong	Yes: **deer**, No: **frog**
5	wrong	Yes: **lizard**, No: **shark**

PREVIEW

Answer Key: Cut and Sort

In the piece column, r1 c1 is the top left piece.

Cut and Sort 1 page 25

Piece	Animal	Box
r1 c1	rabbit	Fur
r1 c2	bird	Feathers
r1 c3	snake	Scales
r2 c1	deer	Fur
r2 c2	lizard	Scales
r2 c3	owl	Feathers

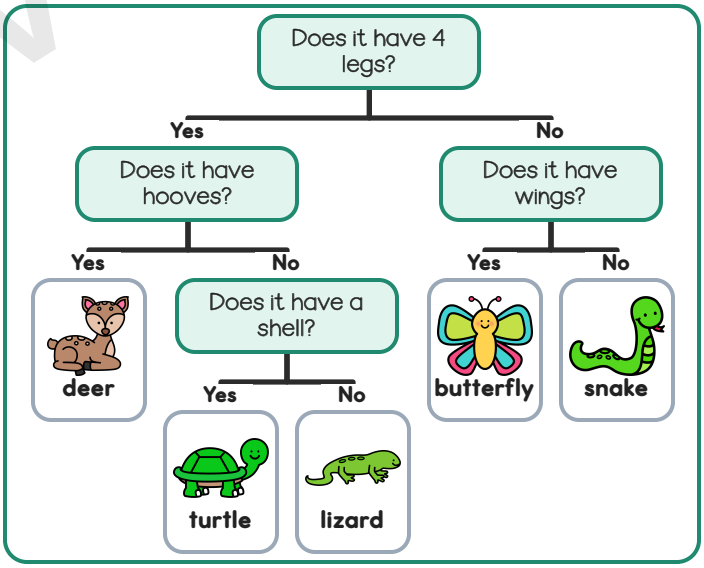
Cut and Sort 2 page 26

Piece	Animal	Box
r1 c1	frog	4 legs
r1 c2	bee	6 or 8 legs
r1 c3	snake	No legs
r2 c1	spider	6 or 8 legs
r2 c2	deer	4 legs
r2 c3	shark	No legs

Cut and Sort 3 page 27

Piece	Animal	Box
r1 c1	bird	No
r1 c2	frog	Yes
r1 c3	snake	No
r1 c4	rabbit	Yes
r1 c5	spider	No
r2 c1	turtle	Yes
r2 c2	shark	No
r2 c3	deer	Yes
r2 c4	snail	No
r2 c5	lizard	Yes

Cut and Build a Key page 28: where each animal goes



Cut and Build a Key: the strip

r1 c1: **snake**; r1 c2: **deer**; r1 c3: **butterfly**; r1 c4: **lizard**; r1 c5: **turtle**. Each animal goes in the leaf box where the key ends for its traits.

PREVIEW

Team Note

Use this page between team meetings or when a student moves classes, to hand off what changed without writing a note from scratch. Everything below is observable, with a blank for the number or the wording your team already uses.

Student _____ Team member _____ Date _____

Page type	Covered since last note (Y/N)	Items right	Still blank
Words and worked example			
Reading a key			
Split and build a key			
Fix the key			
Claims, quiz and short answer			
Cut and sort			

What I saw (observable, not a conclusion)

- Followed a key to the right animal on ___ of ___ items without a prompt.
- Wrote a yes or no question that split a group on ___ of ___ tries.
- Used a trait from the fact file as evidence: yes / no / with a reminder.
- Used the fact file (page 6): yes / no / with a reminder.

Next step

- Next page or set: ___, because ___ (what you saw).
- What to try in another class or at home: ___.
- What to keep doing because it is working: ___.
- Anything for the team meeting to decide: ___ (this page records what happened, never a label or a plan).

Summary, in one or two sentences, for whoever reads this next

A filled-in line, for reference

"Followed the key to the right animal on 4 of 5 items on Read the Key 2 without a prompt on 11/5. Next step: ask the student to say each yes or no answer out loud before moving on." That is the level of detail this page is built for. It matches the filled example on page 39.

PREVIEW

Maya's Tracker (Invented Student)

Maya R. is invented; nothing on this page describes a real student. The blank tracker is on page 35.

Student: Maya R. (an invented student)

Teacher: Mr. Okafor (invented)

Month: November

Page	Page type and set	Items	Right	Date	Notes
7	Key Words	6	5	11/3	Mixed up branch and leaf
8	Worked Example	2	-	-	-
9	Read the Key 1	4	4	11/4	-
10	Read the Key 2	5	4	11/5	Said yes to 6 or more legs for the frog
11	Read the Key 3	5	-	-	-
12	Read the Key 4	5	-	-	-
13	Split the Group	6	5	11/6	Counted the fur row wrong
14	Build a Key 1	2	2	11/10	-
15	Build a Key 2	3	-	-	-
16	Build a Key 3	5	-	-	-
17	Build a Key 4	4	-	-	-
18	Fix the Key 1	3	-	-	-
19	Fix the Key 2	5	4	11/12	Kept the two-in-one question
20	Fix the Key 3	5	-	-	-
21	Claim, Evidence, Reasoning 1	6	-	-	-
22	Claim, Evidence, Reasoning 2	6	-	-	-
23	Quiz	10	-	-	-
24	Short Answer	5	-	-	-
25	Cut and Sort 1	6	5	11/13	One piece pasted in the wrong box
26	Cut and Sort 2	6	-	-	-
27	Cut and Sort 3	10	-	-	-
28	Cut and Build a Key	5	-	-	-

How to read it

Maya R. has done **7 of 22** scored pages and got **29 of 34** items right with no prompt. **2** pages were all right and **5** carry a note. Every number comes from the table.

What the table points to

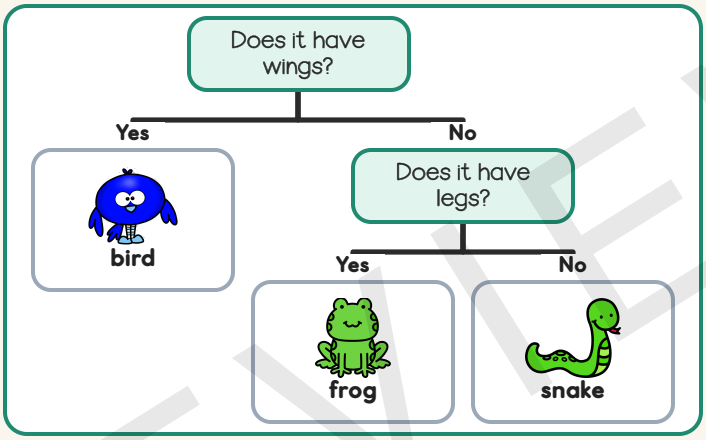
The lowest pages are Read the Key 2 (4 of 5) and Fix the Key 2 (4 of 5). That is where the next practice goes. The 15 pages left blank are not tried yet, never wrong.

PREVIEW

Binder Cover

Slide this into the front of a binder. The divider tabs and a spine label to cut out are on the next page (page 42).

Science - Life Science



DICHOTOMOUS KEY

Read, Build and Sort

Read | **Build** | **Check**

Teacher _____

Class or student _____

PREVIEW