Name _____ Date _____ S-1

DAY 1 · THE KEEPER'S LOGBOOK

Word Bank

These words show up in the story and again in the escape room. Pick at least three today, and add more as you go.



Word	What it means, in my own words	Example or picture
Ratio		
Part-to-part		
Part-to-whole		
Equivalent ratios		
Ratio table		
Tape diagram		
Rate		
Unit rate		
Double number line		

Story words

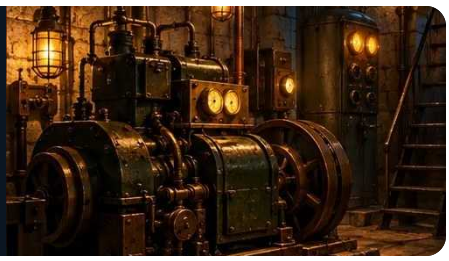
Beacon: a strong light used as a signal or warning. · **Reef:** rock just under the water that can wreck ships. · **Lens:** the glass that focuses and colors a lighthouse's light. · **Generator:** a machine that makes electricity. · **Logbook:** a keeper's record of what happened and what they found.

Name _____ Date _____ 1-1

LESSON 1

Toolkit Practice

Work with your partner on one tool at a time.



Tool 1 · Equal groups

A flag has **3 red stripes** for every **2 white stripes**. Here is one group:



A big flag has **15 stripes**. Color the tape diagram to show it.



Red stripes: _____ White stripes: _____

Tool 2 · Ratio tables

Lemonade: 3 scoops of mix for every 4 cups of water

Scoops	3	6	
Cups of water	4	8	20

4 eggs make 6 muffins. Tip: try 3 muffins first!

Muffins	6	3	9
Eggs	4		

Someone said 9 muffins need **7 eggs**. Why doesn't that work?

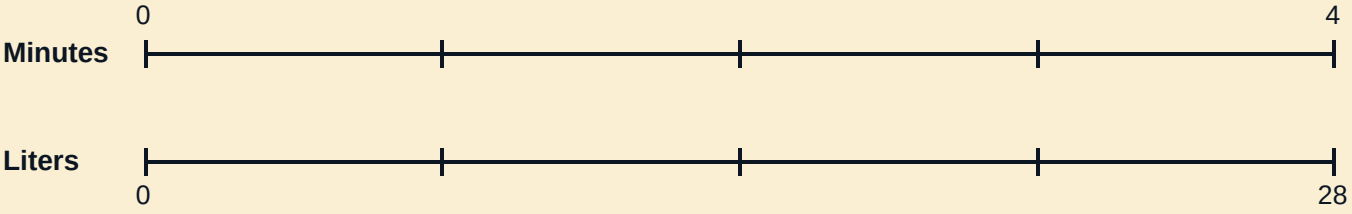
_____

Tool 3 · Unit rates

A pump moves **28 L** in **4 minutes**. Unit rate: _____ L per minute. Time to move **63 L**: _____ minutes

Which runner is faster: **20 laps in 5 minutes** or **18 laps in 3 minutes**? _____

Fill in the double number line for the pump.



My name _____ Partner _____ 2-1

LESSON 2 · THE ESCAPE

Beacon Logbook

Both partners write every clue. You'll need all three in the Signal Gallery. Switch Driver and Navigator at every room!





Room 1 · Lens Room

Clue: _____

How did you solve it?

- ☐ We made groups of 2 blue and 3 gold.
- ☐ We saw that 2 of every 5 spots are blue.
- ☐ We tried colors and checked until it worked.

How we know it works: _____



Room 2 · Generator Room

Clue: _____

How did you solve it?

- ☐ We found the flashes for 1 pack, then scaled up.
- ☐ We combined rows we knew.
- ☐ We tried numbers until one worked.

How we know it works: _____



Room 3 · Radio Room

Clue: _____

How did you solve it?

- ☐ We found the beeps per minute, then divided.
- ☐ We counted up by the beeps each minute.
- ☐ We tried numbers until one worked.

How we know it works: _____



Room 4 · Signal Gallery

Lightning struck! Before you touch a dial, stop and think.

What stayed the same?

What changed?

Dial	The clue we used	Our setting
Lens pattern		____ : ____
Flashes		
Radio time		_____ min

Our signal works because…



Name _____ Date _____ 2-2

LESSON 2 · ALTERNATE ACCESS

Paper Rooms

The same four puzzles as the game. Write each clue in your Beacon Logbook.

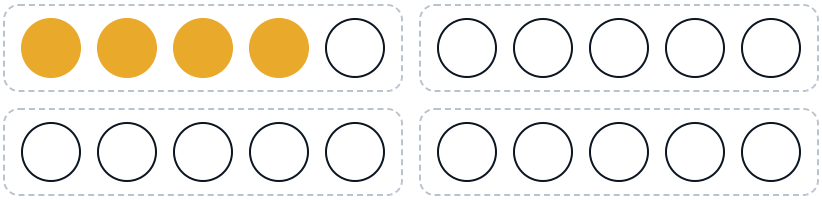


A storm has knocked out the lighthouse, and a rescue ship is heading for the reef. Fix each room in order. Ask your teacher for a hint any time!



Room 1 · Lens Room

The lens has **20 spots**. **4 gold panels** are stuck in place. Fill the lens so it has **2 blue lights for every 3 gold lights**. Write B or G in each empty spot.



Blue: _____ Gold (in all): _____



Room 2 · Generator Room

The generator runs on power packs. **4 power packs make 6 flashes.** How many flashes do **10 power packs** make?

Power packs	4	8	10
Flashes	6	12	

Show how you found it:



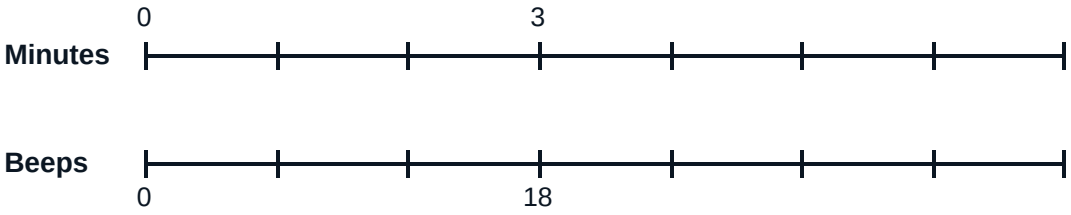
Room 3 · Radio Room

The radio sent **18 beeps in 3 minutes**. How many beeps each minute?

_____

The rescue message is **42 beeps** long. How many minutes will it take?

_____





Room 4 · Signal Gallery

Lightning strikes! Now only **15 lens spots** remain, lightning knocked out **2 of your 10 power packs**, the new message is **36 beeps**, and the ship arrives in **6.5 minutes**. Use your clues to set the signal.

Dial	Your setting and how you know
Lens pattern	____ blue : ____ gold
Flashes	_____ flashes from ____ packs
Radio time	_____ minutes

My signal uses _____ power packs, and I have _____. The message takes _____ minutes, and the ship arrives in _____ minutes.



Name _____ Date _____ 3-1

DAY 2 · LESSON 3: SIGNAL DEBRIEF

Debrief Reflection

Look back at your logbook. What worked, and what would you try next time?



1 · Strategies

Room	The strategy I used	A strategy I'd try next time
Lens		
Generator		
Radio		

2 · Models

Tape diagram, ratio table or double number line: which helps you think most? Why?

3 · The storm's big idea

Why could the crew still solve the Signal Gallery after the storm?

4 · A mistake that taught me something

5 · Out in the world

Another place where a ratio stays the same while the amounts change:

How do I feel now?

Ratio tables	Not yet	Getting there	Got it
Unit rates	Not yet	Getting there	Got it

Names _____ 3-2

EXTENSION · AFTER THE DEBRIEF

Design a Room

Invent a fifth room for the lighthouse. Another pair will solve it!



1 · What broke?

A fog horn? A fuel tank? A supply boat? Your idea:

2 · The story

One or two sentences that set up the problem.

3 · The puzzle

Use a ratio or a rate. Example starter: *The fog horn sounds ___ times every ___ minutes. How many times in ___ minutes?*

4 · Answer key

The answer and how to solve it.

5 · Three hints

Hint 1: a question that gets them thinking

Hint 2: a nudge toward a tool

Hint 3: a concrete next step

Challenge: add a storm twist

Change the amounts partway through, but keep the ratio or rate the same. What changes?

Solver feedback

Solved by _____ Which hint helped most? _____

Name _____ Date _____ 3-3

DAY 2 · LESSON 3

Lantern Check

Answer each question, then circle how sure you feel.



1 The lamp burns **6 L** of oil every **8 hours**. How much oil does it burn in **12 hours**?

○ 8 L ○ 9 L ○ 10 L

Show your thinking

How sure are you? Guessing | Kind of sure | Sure

2 Lantern A runs **18 hours** on **3 L**. Lantern B runs **20 hours** on **5 L**. Which lantern gets more hours from each liter?

○ Lantern A ○ Lantern B ○ They're the same

Show your thinking

How sure are you? Guessing | Kind of sure | Sure

LESSON 2 · CARRY THIS WHILE YOU CIRCULATE

Escape Day Card



Settle 3 | Lens 10 | Generator 8 | Radio 8 | **Signal Gallery 12** | Huddle 4

Room	Answer	Watch for	Ask
1 · Lens 20 spots, 4 gold stuck, 2 blue : 3 gold	**8 blue, 12 gold**	12 more gold (forgets stuck panels) · colors switched · 10 and 10	How many groups of 5 fit in 20? Where do the stuck panels fit?
2 · Generator 4, 8, 10 packs → 6, 12, ?	**15 flashes**	14 (adds 2 to both rows) · 12 (copies a column)	What could 2 packs make? How can columns you know make 10?
3 · Radio 18 beeps in 3 min; 42 beeps?	**6 per minute; 7 minutes**	3 ÷ 18 · 8 minutes (48 beeps)	How many beeps each minute? How many 6s make 42?
4 · Signal Gallery 15 spots, 8 packs, 36 beeps, ship in 6.5 min	**6 : 9 · 12 flashes · 6 minutes**	Old amounts (8 : 12, 15 flashes) · forgets lost packs · skips 6 < 6.5	What stayed the same? What changed? Is 6 minutes soon enough?

Logbook clues

Lens: 8 blue and 12 gold filled 20 spots

Generator: 10 packs make 15 flashes

Radio: 6 beeps a minute; 42 beeps take 7 minutes

Every door

Ask the Navigator: *How do you know it works?*

Both partners write the clue.

Switch Driver and Navigator.

Early finishers

Start the Design a Room planner {3-2}.

Falling behind

Point to hints (free!). Not done at the bell? Finish in the first 5 minutes of Lesson 3.

Don't close or refresh the tab. The game doesn't save progress, and there is no teacher dashboard. The logbook is your record of who finished each room.

Answer Key

Handout	Answers	Watch for
S-1 Word Bank	Answers vary. Look for definitions in students' own words with a correct example, such as 2 blue : 3 gold for part-to-part and 2 out of 5 for part-to-whole.	Mixing up part-to-part and part-to-whole examples.
1-1 Toolkit Practice	Tool 1: **9 red, 6 white** (3 groups of 5). Tool 2: lemonade **15 scoops**; muffins: 3 muffins → **2 eggs**, 9 muffins → **6 eggs**. 7 eggs adds 3; 6 → 9 muffins is ×1.5, so 4 → 6 eggs. Tool 3: **7 L per minute**; 63 L takes **9 minutes**; **18 laps in 3 minutes** is faster (6 vs. 4 per minute). Number line: liters 0, 7, 14, 21, 28.	Adding instead of multiplying. Dividing 4 ÷ 28 for the pump.
2-1 Beacon Logbook	Lens: **8 blue and 12 gold filled 20 spots.** Generator: **10 packs make 15 flashes.** Radio: **6 beeps a minute; 42 beeps take 7 minutes.** Stayed the same: 2 blue : 3 gold; 2 packs : 3 flashes; 6 beeps per minute. Changed: 15 spots; 8 packs; 36 beeps; ship in 6.5 minutes. Dials: **6 : 9**; **12 flashes**; **6 minutes**.	Old amounts (8 : 12, 15 flashes). Forgetting the 2 lost packs. Not checking 6 < 6.5.
2-2 Paper Rooms	Same answers as the logbook. Frame: 8 packs, I have 8; 6 minutes, ship arrives in 6.5 minutes. Number line: beeps 0, 6, 12 … 42.	Same as the game.
3-1 Debrief Reflection	Answers vary. Big idea: the ratios and rates stayed the same; only the amounts changed, so the logbook patterns still worked.	Reflections that list answers without naming the pattern.
3-2 Design a Room	Answers vary. Look for: a true ratio or rate, a correct answer key, and hints that move from a question to a concrete step.	Puzzles that are additive, not ratios ("3 more each time").
3-3 Lantern Check	Q1: **9 L** (12 hours is 1.5 × 8 hours, so 6 L × 1.5). Q2: **Lantern A** (6 hours per liter vs. 4).	10 L adds 4 instead of multiplying. Look at score and confidence together.