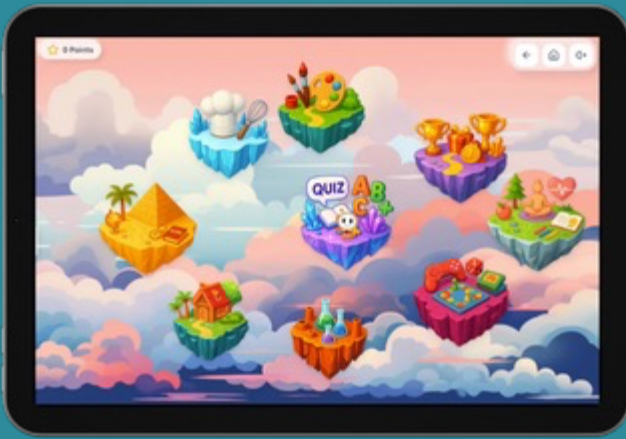


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Generate Rational Patterns - Year 6

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Teacher preparation

Learning target

Learners write and test a finite algorithm that updates one rational value. They name the start, update, record order and stop test, then explain a trace.

Equipment

Model cards, repair-game cards, pencils and scrap paper. Counters are optional. No account or coding device is required.

Lesson 1 - start and record

Use display R1 and model cards 1–3. Diagnose $0.5 + 0.25$ and equality at 1.25. Compare a count stop with a threshold stop.

Lesson 2 - trace update

Use cards 4–9 and guided worksheet 1. Model current value, update and the decision to record. Ask learners to justify the last included value.

Lesson 3 - branched branch

Demonstrate one repair-game turn, including a wrong after-recording check. Use core worksheet 2 and all game cards. Observe each learner explain one choice.

Lesson 4 - edge cases

Use transfer worksheet 2 and rehearsal sheets. Focus on equality at a boundary and precise before-recording language.

Lesson 5 - evidence and next step

Use the independent assessment and rubric. Accept a correct alternative stop convention only when the trace and explanation match it.

Differentiation and game key

Support, core and extension

Support: physical step cards and partial trace tables. Core: complete a finite rule and explain it.

Extension: compare count and threshold stops or test a counterexample.

Game checking rule

For each turn, award a point only when the repaired instruction, trace and reason all match.

Threshold tests check the next candidate before it is recorded.

Cards 1-4

1: 0.5, 0.75, 1, 1.25, 1.5 (count 5).

2: 0.5, 0.75, 1, 1.25; reject 1.5.

3: 0.25, 0.5, 0.75, 1; reject 1.25.

4: 1.5, 1.25, 1, 0.75, 0.5 (count 5).

5: 0.5, 1, 1.5, 2; reject 2.5.

6: 0.75, 1, 1.25, 1.5 (count 4).

7: 0.2, 0.4, 0.6, 0.8, 1 (count 5).

8: 1.25, 1, 0.75, 0.5; reject 2.5.

9: 0.5, 0.75; reject 1.

10: 0.5, 0.75, 1; reject 1.25.

11: 0.5, 1, 2, 4 (count 4).

12: 0.75, 1, 1.25 (update first, count 3).

Cards 5-8

Cards 9-12

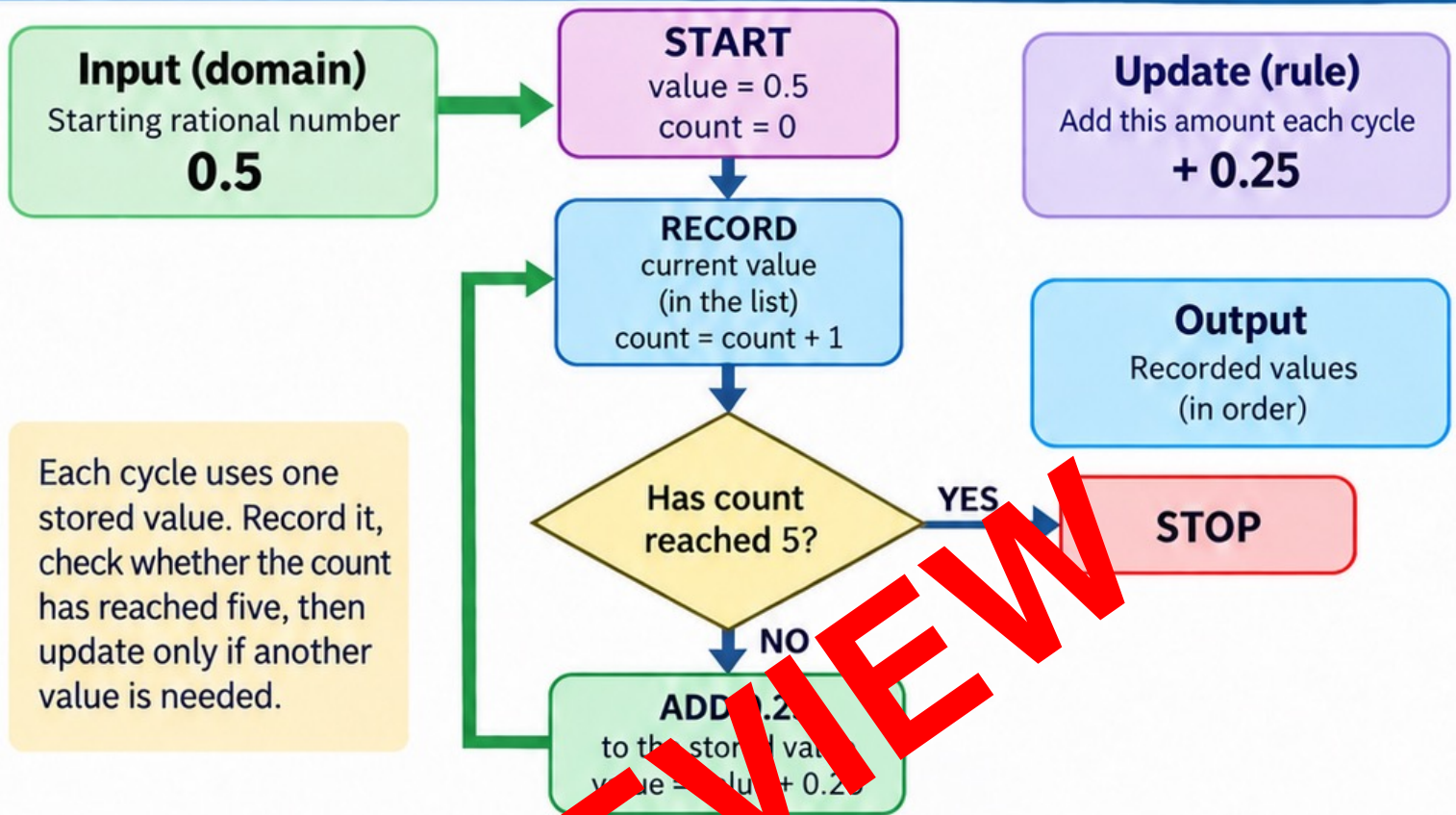
Evidence to notice

A replicable trace and an explanation of the exact stop decision. Record a misconception and choose one targeted next step rather than restarting the full unit.

Start, update, record, stop

One stored rational value changes each cycle.

Keep one value in memory. Record it, check the count, then update if needed.



Example A – Count five

Start at 0.5. Record five values. Stop when the count reaches 5.

Record number	Recorded value
1	0.5
2	0.75
3	1
4	1.25
5	1.5

Five values are recorded:
0.5, 0.75, 1, 1.25, 1.5

Example B – Stop before exceeding 1.25

Start at 0.5. Record values while the next value would not exceed 1.25. Test the candidate value **before** recording it.

Step	Action and result	Recorded values
1	Record 0.5	0.5
2	Add 0.25 → 0.75 (≤ 1.25, record)	0.5, 0.75
3	Add 0.25 → 1 (≤ 1.25, record)	0.5, 0.75, 1
4	Add 0.25 → 1.25 (≤ 1.25, record)	0.5, 0.75, 1, 1.25
5	Add 0.25 → 1.5 (> 1.25, do not record. Stop.)	0.5, 0.75, 1, 1.25

Recorded values:
0.5, 0.75, 1, 1.25

Important contrast

Mapping five separate inputs (0.5, 0.75, 1, 1.25, 1.5) once each is different from repeatedly updating one stored value. In this unit we generate a pattern by updating a single value each cycle.

Worked model cards 1-3

Same rule.
Different questions.
Look closely!

1 COUNT FIVE

Start at 0.5.
Record the value first.
Add 0.25 after each recording.
Stop after 5 outputs.



Record, then add,
and do this 5 times.

Step	Recorded value	Next value (add 0.25)
1	0.5	0.75
2	0.75	1
3	1	1.25
4	1.25	1.5
5	1.5	–

Trace of outputs: 0.5, 0.75, 1, 1.25, 1.5

2 THRESHOLD

Start at 0.5.
Add 0.25 after each recording.
Stop BEFORE the next value
exceeds 1.25.



Check the next value
before you record it.

Step	Recorded value	Next value (add 0.25)	Continue?
1	0.5	0.75	Yes
2	0.75	1	Yes
3	1	1.25	Yes
4	1.25	1.5	No (stop here)

1.5 would exceed 1.25,
so it is not recorded.

Trace of outputs: 0.5, 0.75, 1, 1.25

3 RECORD FIRST?

Compare two procedures.
Start at 0.5, add 0.25, count 3
outputs.



The order makes
a difference!

Record-first

1. Record the current value.
2. Add 0.25.
3. Repeat until you have 3 outputs.

Step	Recorded value
1	0.5
2	0.75
3	1

Trace of outputs: 0.5, 0.75, 1

Update-first

1. Add 0.25 first.
2. Record the new value.
3. Repeat until you have 3 outputs.

Step	Recorded value
1	0.75
2	1
3	1.25

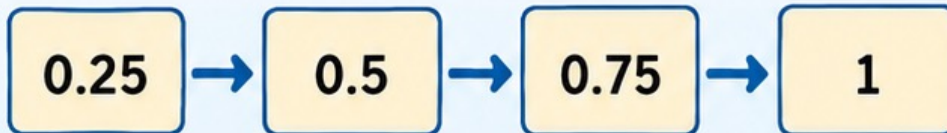
Trace of outputs: 0.75, 1, 1.25

Worked model cards 4–6

Look at each worked example. Notice how the pattern is generated and where it stops.
Then answer the question on each card.

Card 4

Start at 0.25. Add 0.25 each time.
Record 4 values.



Each time we add 0.25 to the previous value.

$$0.25 + 0.25 = 0.5$$

$$0.5 + 0.25 = 0.75$$

$$0.75 + 0.25 = 1$$

Question: Which condition decides the end?

Card 5

Start at 0.25. Add 0.25 each time.
Stop before the next value would exceed 1.

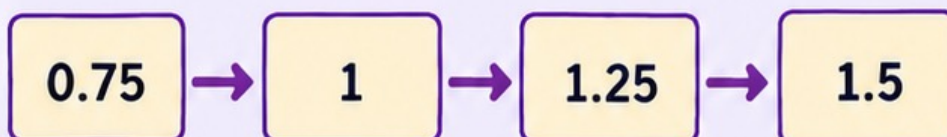


The next value would be 1.25, which is greater than 1, so we stop here.

Question: Which condition decides the end?

Card 6

Start at 0.75. Add 0.25 each time.
Count 4 values.



$$0.75 + 0.25 = 1$$

$$1 + 0.25 = 1.25$$

$$1.25 + 0.25 = \boxed{?}$$

Question: Which condition decides the end?

Worked model cards 7 – 9

Year 6 Mathematics – Generate Rational Patterns

Look at
the steps.
See the pattern.
Make the rule.

7

Start at 1.5. Subtract 0.25 each time. Count 5 numbers.

Step	Current value	Candidate (– 0.25)	Use candidate?
1	1.5	1.25	Yes
2	1.25	1	Yes
3	1	0.75	Yes
4	0.75	0.5	Yes
5	0.5	0.25	No – stop (5 numbers)

The number pattern is:

1.5, 1.25, 1, 0.75, 0.5

8

Start at 0.5. Add 0.5 each time. Stop before the next number exceeds 2.

Step	Current value	Candidate (+ 0.5)	Use candidate?
1	0.5	1	Yes
2	1	1.5	Yes
3	1.5	2	Yes
4	2	2.5	No – stop (next exceeds 2)

The number pattern is:

0.5, 1, 1.5, 2

9

Start at 0.2. Add 0.2 each time. Count 5 numbers.

Step	Current value	Candidate (+ 0.2)	Use candidate?
1	0.2	0.4	Yes
2	0.4	0.6	Yes
3	0.6	0.8	Yes
4	0.8	1	Yes
5	1	1.2	No – stop (5 numbers)

The number pattern is:

0.2, 0.4, 0.6, 0.8, 1

Worked model cards 10–12

Generate Rational Patterns

Look at each card. Follow the rule, make the list and check the stopping test.

10

Start at 1.25

Subtract 0.25 each time.

Stop before the next term would be **less than** 0.5.

1.25

→

1

→

0.75

→

0.5

11

Start at 0.5

Add 0.25 each time.

Stop before the next term would **exceed** 0.75.

0.5

→

0.75

12

Start at 0.5

Add 0.25 each time.

Stop before the next term would **exceed** 1.

0.5

→

0.75

→

1

?

In cards 10–12, the final term is equal to the boundary value.
Explain why equality is included in each list.

Fractional trace: guided decisions

Use the rule, complete the trace and make the decision. Show your working and explain your thinking.

Name: _____

Patterns grow
when we make
good choices.

1 After recording 0.75, add 0.25: candidate?

The rule is “start at 0.5 and add 0.25 each time”.

The table shows the first two values. After recording 0.75, add 0.25.

What is the next candidate value? Should it be recorded in the trace?

Step	Value
1	0.5
2	0.75
3	

Working and explanation:

2 Count-five rule beginning at 0.5

Use the rule “start at 0.5 and add 0.25 each time”.

Which value is the fifth value in the trace?

Step	Value
1	0.5
2	0.75
3	
4	
5	

Working and explanation:

3 Before-exceeding 1.5 rule

Use the rule “start at 0.5 and add 0.25 each time, but stop before the next value would be greater than 1.25”.

After recording 1.25, the next candidate value is 1.5.

Should 1.5 be recorded? Should the trace stop? Explain your decision.

Step	Value
1	0.5
2	0.75
3	1
4	1.25
5	1.5 (candidate)

Working and explanation:

4 From 0.5, add 0.25, update first

Use the rule “start at 0.5, add 0.25 and record the new value each time”.

Fill the three output values.

Output	Value
1	
2	
3	

Working and explanation:

Fractional trace: guided decisions

Use the rule, complete the trace and make the decision. Show your working and explain your thinking.

Name: **ANSWERS**

Patterns grow
when we make
good choices.

1 After recording 0.75, add 0.25: candidate?

The rule is “start at 0.5 and add 0.25 each time”.

The table shows the first two values. After recording 0.75, add 0.25.

What is the next candidate value? Should it be recorded in the trace?

Step	Value
1	0.5
2	0.75
3	1

Working and explanation:

- $0.75 + 0.25 = 1$, so 1 is the next candidate.

2 Count-five rule beginning at 0.5

Use the rule “start at 0.5 and add 0.25 each time”.

Which value is the fifth value in the trace?

Step	Value
1	0.5
2	0.75
3	1
4	1.25
5	1.5

Working and explanation:

The fifth recorded value is 1.5, so the count rule stops.

3 Before-exceeding 1.5 rule

Use the rule “start at 0.5 and add 0.25 each time, but stop before the next value would be greater than 1.25”.

After recording 1.25, the next candidate value is 1.5.

Should 1.5 be recorded? Should the trace stop? Explain your decision.

Step	Value
1	0.5
2	0.75
3	1
4	1.25
5	1.5 (candidate)

Working and explanation:

Stop, because 1.5 exceeds 1.25, so it is not recorded.

4 From 0.5, add 0.25, update first

Use the rule “start at 0.5, add 0.25 and record the new value each time”.

Fill the three output values.

Output	Value
1	0.75
2	1
3	1.25

Working and explanation:

Name: _____

Fractional trace: core decisions

Generate rational patterns by following the rules and recording terms.

A. Fixed count (4 terms)

Start at 0.25. Add 0.25 each time.
Record 4 terms, including the start.

Trace:

→ → →

Reason:

B. Threshold (stop before exceeding 1)

Start at 0.25. Add 0.25 each time.
Continue while the next term would not exceed 1.
Record all terms, including the start.

Trace:

→ → →

Reason:

C. Fixed count (4 terms)

Start at 0.75. Add 0.25 each time.
Record 4 terms, including the start.

Trace:

→ → →

Reason:

D. Fixed count (5 terms)

Start at 0.5. Subtract 0.25 each time.
Record 5 terms, including the start.

Trace:

→ → → →

Reason:

E. Fixed count (5 terms)

Start at 0.2. Add 0.2 each time.
Record 5 terms, including the start.

Trace:

→ → → →

Reason:

F. Threshold (stop before falling below 0.5)

Start at 1.25. Subtract 0.25 each time.
Continue while the next term would not fall below 0.5.
Record all terms, including the start.

Trace:

→ → →

Reason:

Name: **ANSWERS**

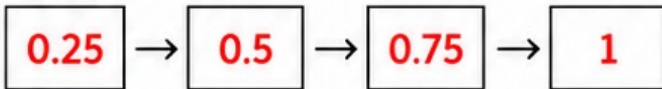
Fractional trace: core decisions

Generate rational patterns by following the rules and recording terms.

A. Fixed count (4 terms)

Start at 0.25. Add 0.25 each time.
Record 4 terms, including the start.

Trace:



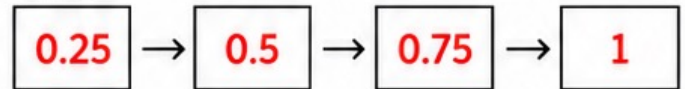
Reason:

Stop after 4 terms (fixed count).

B. Threshold (stop before exceeding 1)

Start at 0.25. Add 0.25 each time.
Continue while the next term would not exceed 1.
Record all terms, including the start.

Trace:



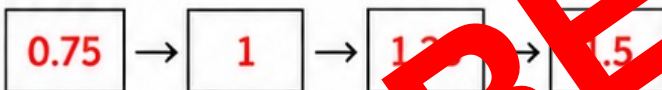
Reason:

Stop because the next term would be 1.25, which exceeds 1.

C. Fixed count (4 terms)

Start at 0.75. Add 0.25 each time.
Record 4 terms, including the start.

Trace:



Reason:

Stop after 4 terms (fixed count).

D. Fixed count (5 terms)

Start at 1.5. Subtract 0.25 each time.
Record 5 terms, including the start.

Trace:



Reason:

Stop after 5 terms (fixed count).

E. Fixed count (5 terms)

Start at 0.2. Add 0.2 each time.
Record 5 terms, including the start.

Trace:



Reason:

Stop after 5 terms (fixed count).

F. Threshold (stop before falling below 0.5)

Start at 1.25. Subtract 0.25 each time.
Continue while the next term would not fall below 0.5.
Record all terms, including the start.

Trace:



Reason:

Stop because the next term would be 0.25, which is below 0.5.

Name: _____

Fractional trace: transfer and reasons

Generate rational patterns by tracing values and explaining your reasoning.

- 1.** Start at 0.5. Double the value each time. Record the first four values in the boxes. Then explain why the list has a finite count.

Trace (first four values):

	→		→		→	
--	---	--	---	--	---	--

Reason (why the list has a finite count):

- 2.** Start at 0.5. Add 0.5 each time. Stop before the next value would exceed 2. Record the four accepted values in the first four boxes. Write the rejected next candidate in the fifth box and cross it out. Then explain why it is included.

Trace (values):

	→		→		→	
--	---	--	---	--	---	--

Reason (why 2 is included):

- 3.** Start at 0.5. Add 0.25 each time. Stop before the next value would exceed 0.75. Record the values in the boxes. Then explain why only two values appear.

Trace (values):

	→	
--	---	--

Reason (why only two values appear):

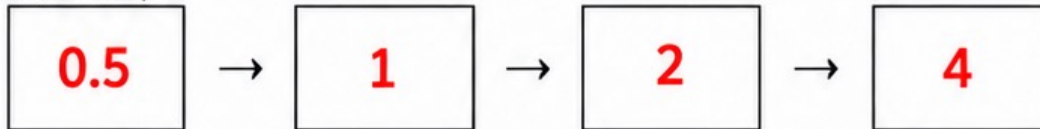
Name: **ANSWERS**

Fractional trace: transfer and reasons

Generate rational patterns by tracing values and explaining your reasoning.

- 1.** Start at 0.5. Double the value each time. Record the first four values in the boxes. Then explain why the list has a finite count.

Trace (first four values):



Reason (why the list has a finite count):

Exactly four values are recorded.

- 2.** Start at 0.5. Add 0.5 each time. Stop before the next value would exceed 2. Record the four accepted values in the first four boxes. Write the rejected next candidate in the fifth box and cross it out. Then explain why it is included.

Trace (values):



Reason (why 2 is included):

2 is included because equality at the boundary is allowed.

- 3.** Start at 0.5. Add 0.25 each time. Stop before the next value would exceed 0.75. Record the values in the boxes. Then explain why only two values appear.

Trace (values):



Reason (why only two values appear):

The next candidate value, 1, exceeds 0.75.

Repair the stop rule: game guide

Year 6 Mathematics – Generate Rational Patterns

Work with a partner to generate terms in a number pattern, repair any ambiguous stop instruction, and explain why the pattern stops.

Think
Reason
Explain
Mathematics
in action!

Materials



Challenge cards
(12 cards on following two pages)

Cards



Pencil



Scrap paper



Counters (optional)

Goal

Generate the terms of a rational number pattern, repair the stop rule so it is clear, and explain why the pattern stops.

Setup

- 1 Sit with a partner.
- 2 Place the 12 challenge cards face down between you (on the following two pages).
- 3 Have a pencil and scrap paper ready. Counters are optional.

How to play (each turn)

- 1 **Choose a card.** Take the top card and read it aloud.
- 2 **State the order.** Say the start value, the update (what to add or subtract each time), and the record order (list the values in sequence).
- 3 **Repair the stop instruction.** If the stop rule is ambiguous, rewrite it so it is clear and precise. Use an exact rational value and state whether the rule means before recording a value that would exceed a threshold, or another clear condition.
- 4 **Trace 2–5 values.** Write the next 2 to 5 values of the pattern, stopping at the correct point.
- 5 **Explain why it stops.** Give a brief reasoning for the repaired stop rule.
- 6 **Partner checks.** Your partner checks your rule, values and explanation using the teacher key.
- 7 **Score.** You score one point only if your repaired rule, the trace of values and the explanation are all correct.

Worked turn (example)

Card says:

Start: 0.5
Update: add 0.25
Stop: before the next value exceeds 1.25



Correct answer:

0.5, 0.75, 1, 1.25
The next value (1.5) exceeds 1.25, so it is not recorded.



Do not record:

1.5
It exceeds 1.25.

Step 1: State the order.

Start at 0.5, add 0.25 each time, record the values in order.

Step 2: Repair the stop instruction.

Stop before recording a value that would exceed 1.25.

Step 3: Trace values.

0.5, 0.75, 1, 1.25

Step 4: Explain why it stops.

The next value would be 1.5, which is greater than 1.25, so we stop before recording it.

Finish Condition

Keep taking turns.

Finish after each partner has completed 6 cards.

Add up your points.

The partner with the most points wins!

Remember

- Clearly state the start, update and record order.
- Use exact rational values (fractions or decimals).
- Make the stop rule precise, including an explicit before-recording threshold.
- Show your working and explain why the pattern stops.
- You only get one point for a turn if the rule, values and explanation are all correct.
- Every turn is practice, so give your best reasoning!

Same pattern. Clear thinking.
Bigger mathematics!

Repair game challenge cards 1 – 6

Each card has a mistake in the stop wording. Repair it, trace the values and explain why it stops.

1

Repair the stop wording; trace values; explain why it stops.

Start: 0.5
Update: + 0.25 each time
Stop: after 5

Record rule: Record the starting value first.

Trace the values: _____

Explain why it stops: _____

2

Repair the stop wording; trace values; explain why it stops.

Start: 0.5
Update: + 0.25 each time
Stop: stop at 1.25

Record rule: Record the starting value first.

Trace the values: _____

Explain why it stops: _____

3

Repair the stop wording; trace values; explain why it stops.

Start: 0.25
Update: + 0.25 each time
Stop: stop at 1

Record rule: Record the starting value first.

Trace the values: _____

Explain why it stops: _____

4

Repair the stop wording; trace values; explain why it stops.

Start: 5
Update: - 0.25 each time
Stop: after 5

Record rule: Record the starting value first.

Trace the values: _____

Explain why it stops: _____

5

Repair the stop wording; trace values; explain why it stops.

Start: 0.5
Update: + 0.5 each time
Stop: stop at 2

Record rule: Record the starting value first.

Trace the values: _____

Explain why it stops: _____

6

Repair the stop wording; trace values; explain why it stops.

Start: 0.75
Update: + 0.25 each time
Stop: after 4

Record rule: Record the starting value first.

Trace the values: _____

Explain why it stops: _____

Repair game challenge cards 7–12

Each card has a pattern with a problem. Repair the stop instruction.
Write a precise stop test, show the values, and explain why it stops.

7

Start at 0.2
Add 0.2 each time
Count 5 values.

What is the exact stop test?

Where does it happen?

List the values.

Why does it stop there?

8

Start at 1.25
Subtract 0.25 each time
Stop before the next value would
be below 0.5.

What is the exact stop test?

Where does it happen?

List the values.

Why does it stop there?

9

Start at 0.5
Add 0.25 each time
Stop before exceeding 0.75.

What is the exact stop test?

Where does it happen?

List the values.

Why does it stop there?

10

Start at 0.5
Add 0.25 each time
Stop before exceeding 1.

What is the exact stop test?

Where does it happen?

List the values.

Why does it stop there?

11

Start at 0.5
Double each time
Count 4 values.

What is the exact stop test?

Where does it happen?

List the values.

Why does it stop there?

12

Start at 0.5
Add 0.25 each time, update first,
record 3 values.
This is different from record first.

What is the exact stop test?

Where does it happen?

List the values.

Why does it stop there?

Fresh rehearsal: two algorithms

Algorithm A

- 1. Record 0.4.
- 2. Repeatedly add 0.2 to the previous value.
- 3. Stop after five recorded values.

Trace the values in the table below.

Step	Recorded value
1	
2	
3	
4	
5	

Algorithm B

- 1. Record 1.4.
- 2. Repeatedly subtract 0.3 from the previous value.
- 3. Stop before recording a candidate below 0.5.

Trace the values in the table below.

Step	Recorded value
1	
2	
3	
4	

Next candidate value	Is it below 0.5?	Record or reject?

Circle the rejected candidate.

Explain why both algorithms finish.
Use the information in the steps to support your explanation.

Fresh rehearsal: two algorithms

Algorithm A

- 1. Record 0.4.
- 2. Repeatedly add 0.2 to the previous value.
- 3. Stop after five recorded values.

Trace the values in the table below.

Step	Recorded value
1	0.4
2	0.6
3	0.8
4	1
5	1.2

Algorithm B

- 1. Record 1.4.
- 2. Repeatedly subtract 0.3 from the previous value.
- 3. Stop before recording a candidate below 0.5.

Trace the values in the table below.

Step	Recorded value
1	1.4
2	1.1
3	0.8
4	0.5

Next candidate value	Is it below 0.5?	Record or reject?
0.2	Yes	Reject

Circle the rejected candidate.

Explain why both algorithms finish.
Use the information in the steps to support your explanation.

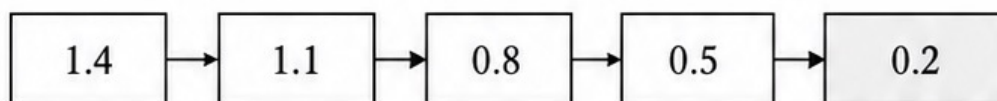
A stops after five recordings. B tests the next candidate before recording; 0.2 falls below 0.5, so 0.5 is its last recorded value.

Repair a wrong trace

Unit: Generate Rational Patterns

Algorithm B: Record 1.4. Repeatedly subtract 0.3. Stop BEFORE recording a candidate below 0.5.

A learner followed Algorithm B and made the trace below.



(claim being tested,
not an approved answer)

Record 0.2 after 0.5
because the stop check
comes later.

1. Identify the exact step in the trace that is incorrect. Give a brief reason.

2. Rewrite the stop rule using before recording language.

3. Give the corrected trace for Algorithm B. Also state the candidate that is rejected and not recorded.

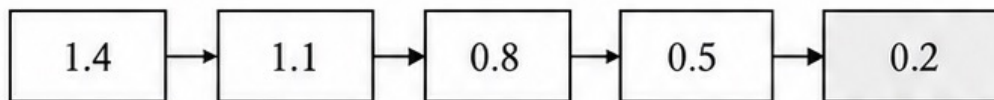
4. Explain how equality at 0.5 affects the result.

Repair a wrong trace

Unit: Generate Rational Patterns

Algorithm B: Record 1.4. Repeatedly subtract 0.3. Stop BEFORE recording a candidate below 0.5.

A learner followed Algorithm B and made the trace below.



(claim being tested,
not an approved answer)

Record 0.2 after 0.5
because the stop check
comes later.

1. Identify the exact step in the trace that is incorrect. Give a brief reason.

0.2 is the incorrect recorded step; it is below 0.5.

2. Rewrite the stop rule using before recording language.

Before recording a next candidate, stop if it is below 0.5.

3. Give the corrected trace for Algorithm B. Also state the candidate that is rejected and not recorded.

Correct recorded trace is 1.4, 1.1, 0.8, 0.5.

Rejected next candidate is 0.2.

4. Explain how equality at 0.5 affects the result.

**0.5 is included because equality with the lower boundary is allowed;
only candidates BELOW 0.5 are rejected.**

Name: _____

Date: _____

Two algorithms and a precise stop

Year 6 Mathematics – Independent Assessment

- Values are recorded starting with the given start value.
- The stop rule always tests the next candidate value before it is recorded.

A. Record 0.6, then add 0.2 each time until four values have been recorded.

Trace the outputs in the table and state the reason you stop.

Step (count)	1	2	3	4
Output value				

Reason for stopping: _____

B. Record 1.5, then subtract 0.25 each time.

Stop before the next value would be below 0.75.

Trace the outputs in the table and write the candidate value you reject.

Step (count)	1	2	3	4
Output value				

Candidate value rejected (not recorded): _____

Reason for stopping (refer to the next candidate value): _____

C. The stop rule below is ambiguous.

“Stop when the value is greater than 1.”

Repair this rule so it is precise. In your response, specify:

- when to test the condition (before recording or after recording), and
- whether to include the boundary-crossing value in the recorded outputs.

Use your repaired rule to show one short trace starting from 0.5 with a step of +0.25.

Record your outputs in the table and give a brief reason for stopping.

Step (count)	1	2	3	4
Output value				

My repaired stop rule (write it precisely): _____

Trace and reason: _____

Two algorithms and a precise stop

Year 6 Mathematics – Independent Assessment

- Values are recorded starting with the given start value.
- The stop rule always tests the next candidate value before it is recorded.

A. Record 0.6, then add 0.2 each time until four values have been recorded.
Trace the outputs in the table and state the reason you stop.

Step (count)	1	2	3	4
Output value	0.6	0.8	1	1.2

Reason for stopping: **Stop after four recordings.**

B. Record 1.5, then subtract 0.25 each time.
Stop before the next value would be below 0.75.
Trace the outputs in the table and write the candidate value you reject.

Step (count)	1	2	3	4
Output value	1.5	1.25	1	0.75

Candidate value rejected (not recorded): **0.5**

Reason for stopping (refer to the next candidate value):

0.5 is below 0.75, so test and reject before recording.

C. The stop rule below is ambiguous.

“Stop when the value is greater than 1.”

Repair this rule so it is precise. In your response, specify:

- when to test the condition (before recording or after recording), and
- whether to include the boundary-crossing value in the recorded outputs.

Use your repaired rule to show one short trace starting from 0.5 with a step of +0.25.

Record your outputs in the table and give a brief reason for stopping.

Step (count)	1	2	3	4
Output value	0.5	0.75	1	~~1.25~~

My repaired stop rule (write it precisely): **Before recording each next candidate, stop if it exceeds 1.**

Trace and reason: **1.25 exceeds 1; equality at 1 is allowed.**

Accept another precise convention with a matching trace and reason.

Year 6 Mathematics

Generate Rational Patterns

Name: _____

Date: _____

Criteria	Needs teaching	Developing with support	Target met independently
Concept / accuracy	Inaccurate trace or representation.	Correct on familiar model with prompt, insecure on contrast.	Correct start-update-stop relation in fresh case.
Application / procedure	Cannot complete meaningful trace and repair yet.	Completes with model or step-by-step prompts	Independently traces two algorithms and repairs ambiguous stop rule.
Reason / evidence	Guess or rule label only.	Relevant detail but not needs prompting.	Uses recorded and rejected candidates to explain result.
Transfer / communication	Proposed unclear or method not transferred.	Clear with support but fresh case insecure.	Coherent explanation in fresh matched case.

Evidence noticed:

Next teaching step:

Generate Rational Patterns



Generate Rational Patterns Quiz

