Daily Routines that Promote Thinking

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Type in the chat the grade(s) or age(s) of the students with which you are working.

Plan for today

1. We are going to share 3 routines that help promote logical mathematical thinking
   - Is It Fair?
   - Who Is Hiding?
   - Quick Images with the 100-Frame

2. We will explore how to use these routines to engage children in mathematical brain games

3. We will share specific facilitation tips that can be used to support mathematical thinking

Routine:

Is It Fair?

Is It Fair?

Some things to consider:

1. What is the role of the context in the development of problem-solving strategies and habits of mind?
2. What is the role of the “teacher” (or parent)?
3. What happens to the learner when they’re given the space to think?

Is it Fair?

Three key things to consider when using this routine:

1. How you introduce the context matters
2. How you structure the activity is critical
3. Assessing as you go- using assessment to inform teaching choices.

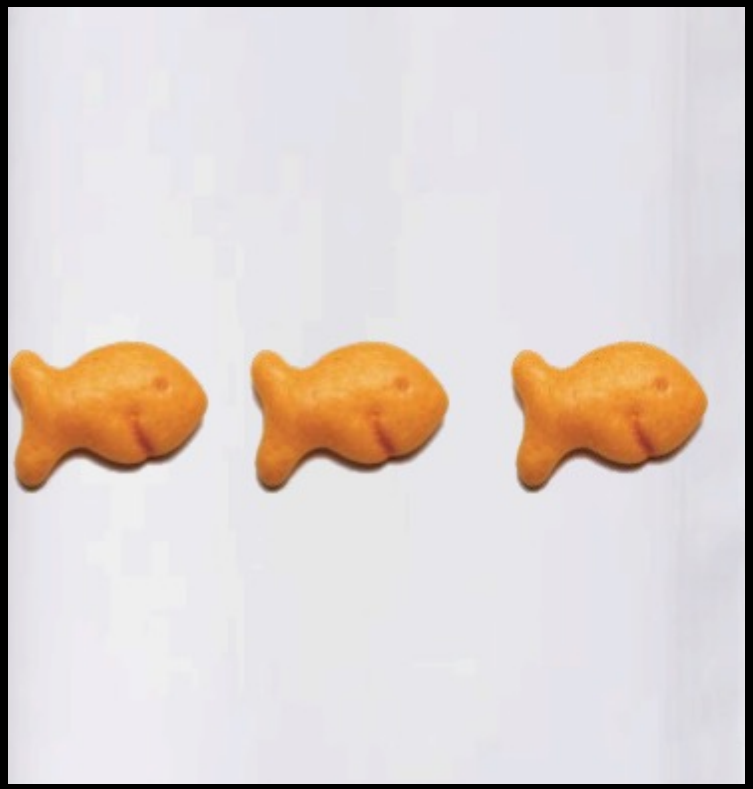
Is It Fair?

Yes

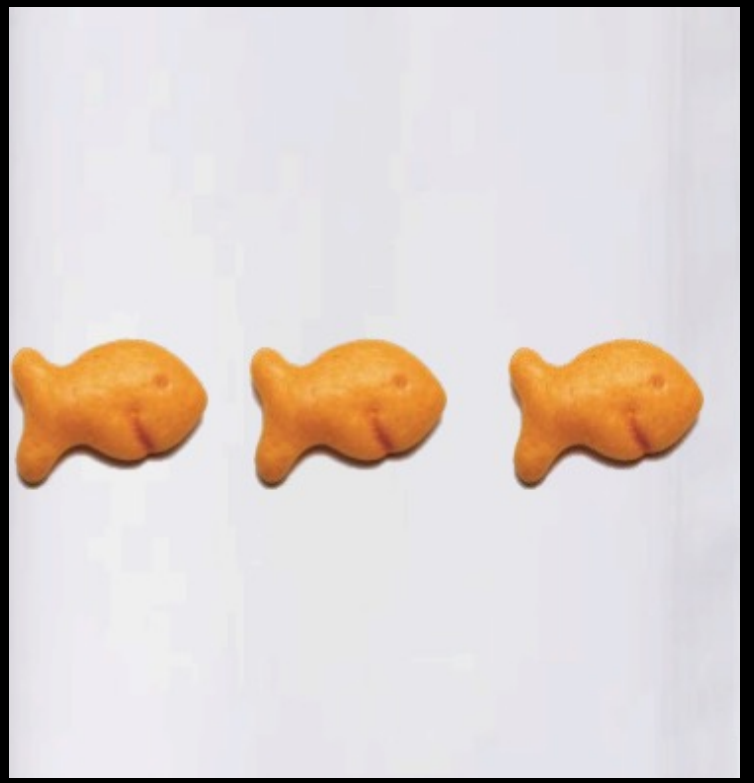
No

Is It Fair?

Emilio



Martha

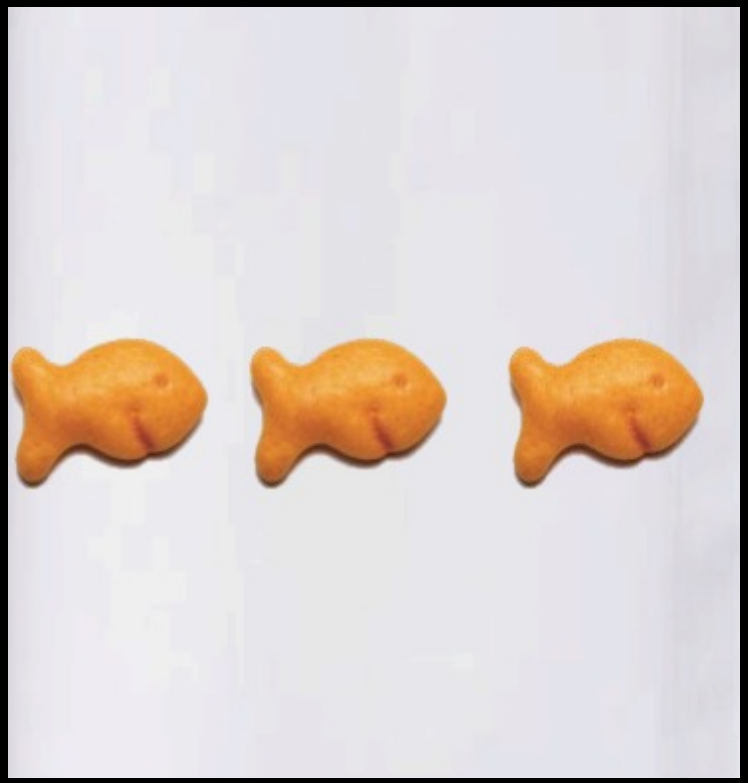


Yes

No

Is It Fair?

Emilio



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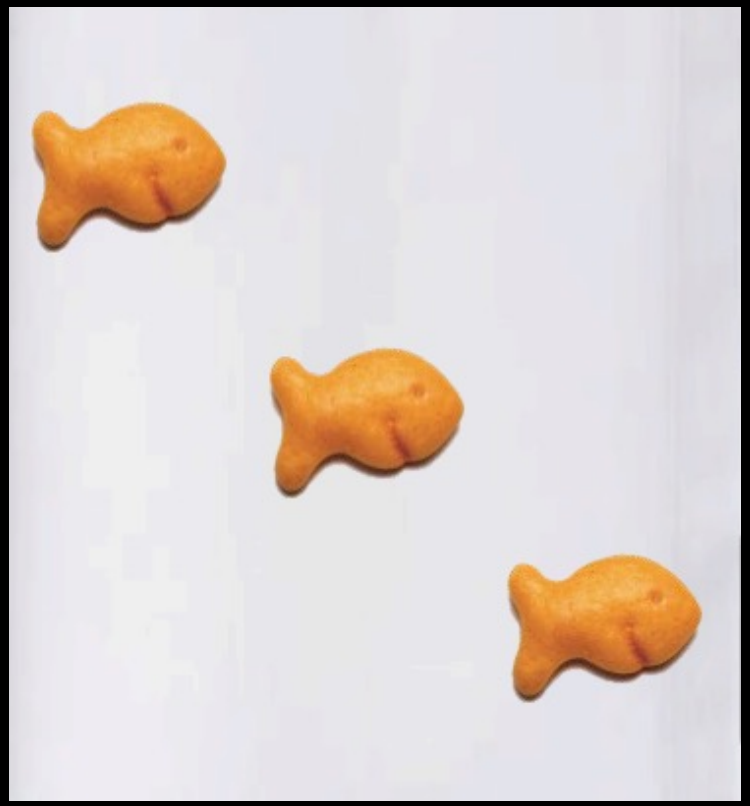
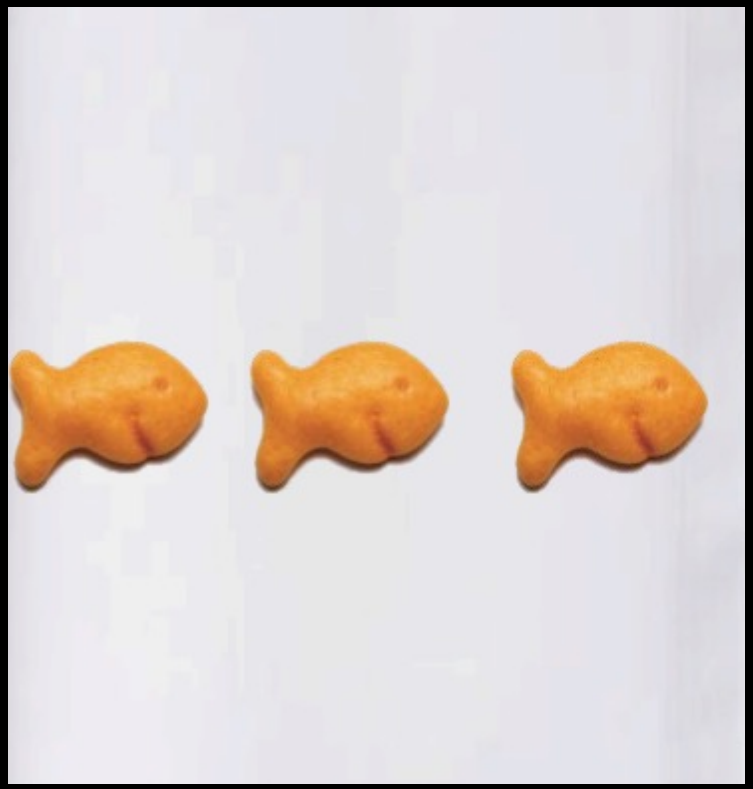


Yes

No

Is It Fair?

Emilio



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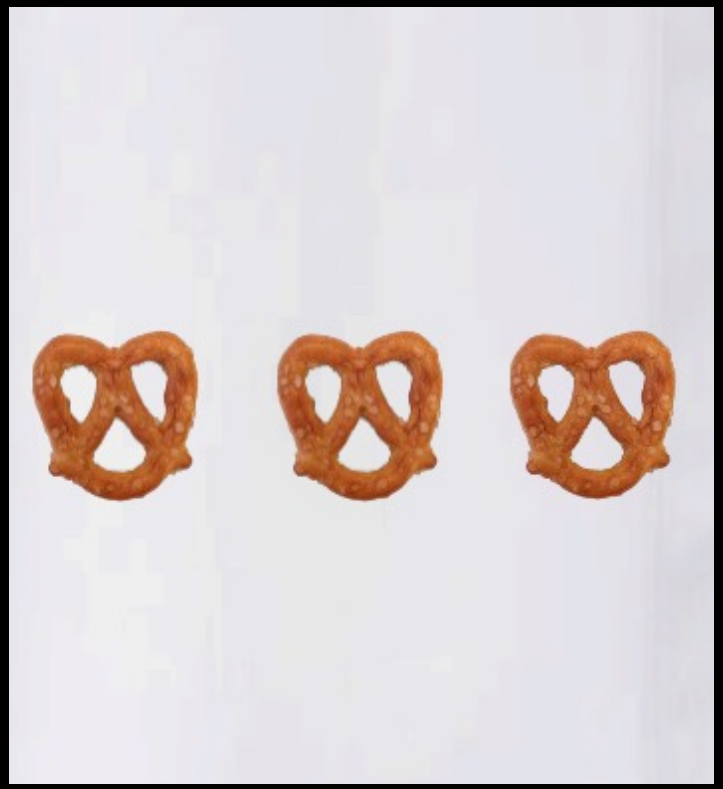


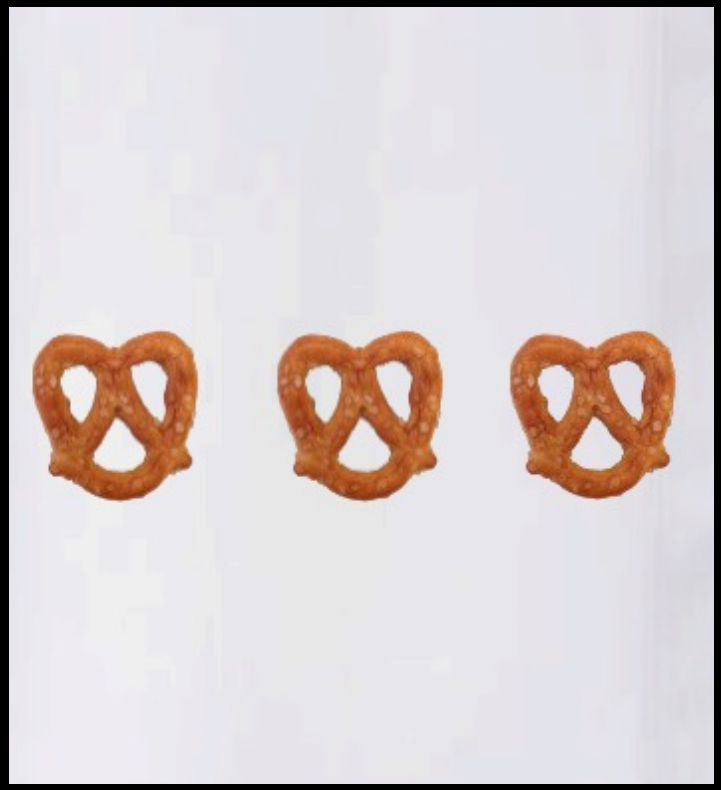
Yes

No

Is It Fair?

Emilio

Martha



Yes

No

Is It Fair?

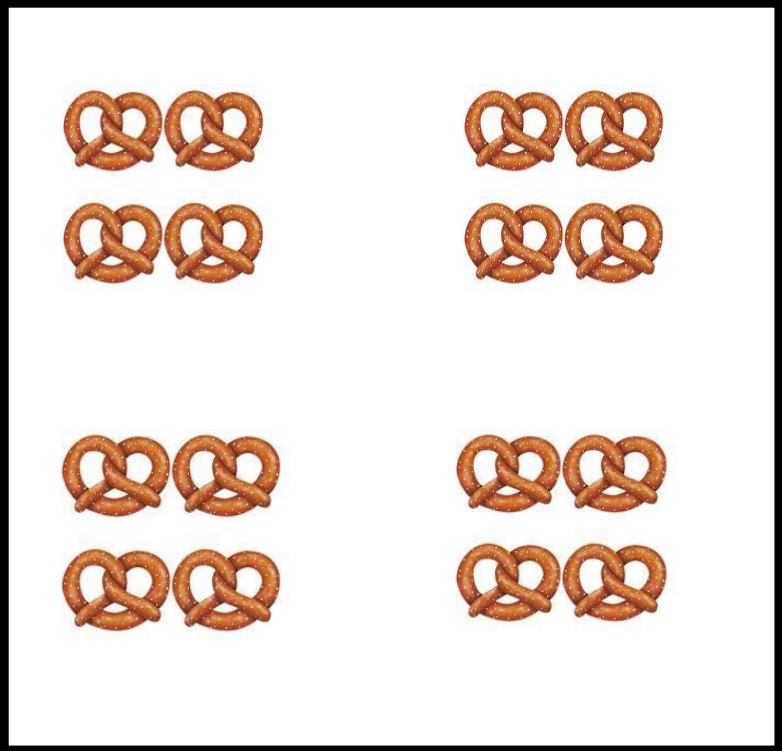
Developing important early multiplication ideas

Yes

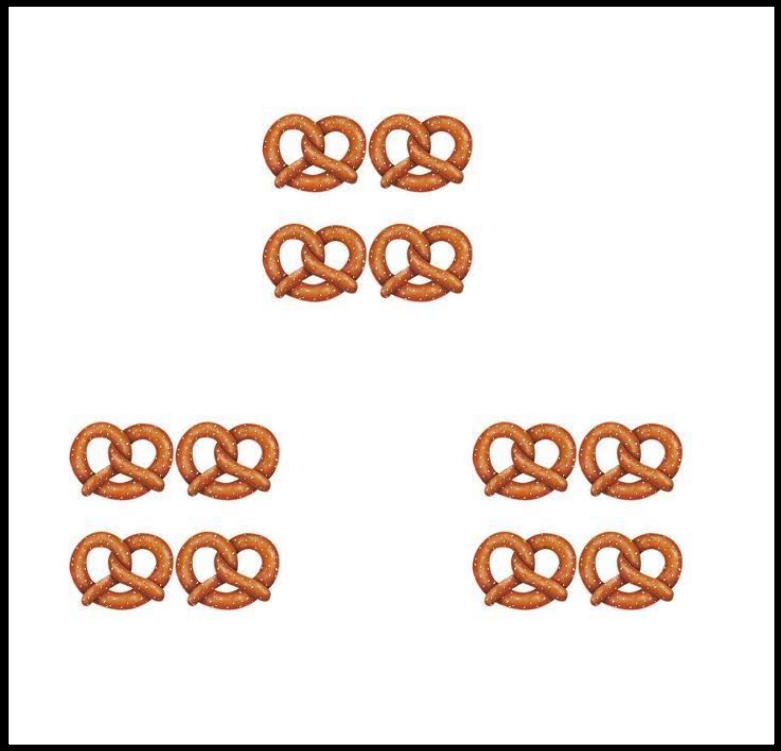
No

Is It Fair?

Emilio



Martha

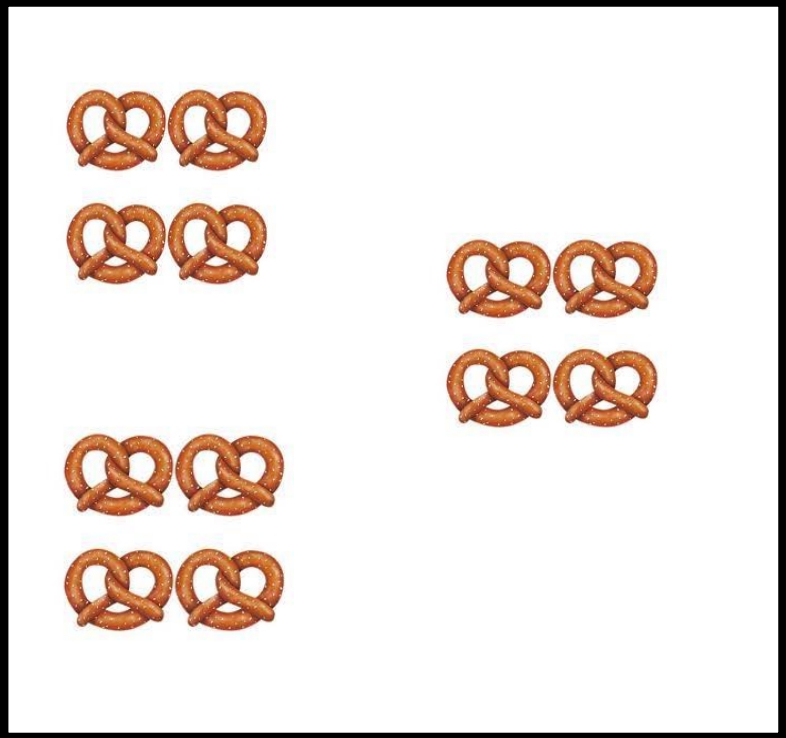


Yes

No

Is It Fair?

Emilio



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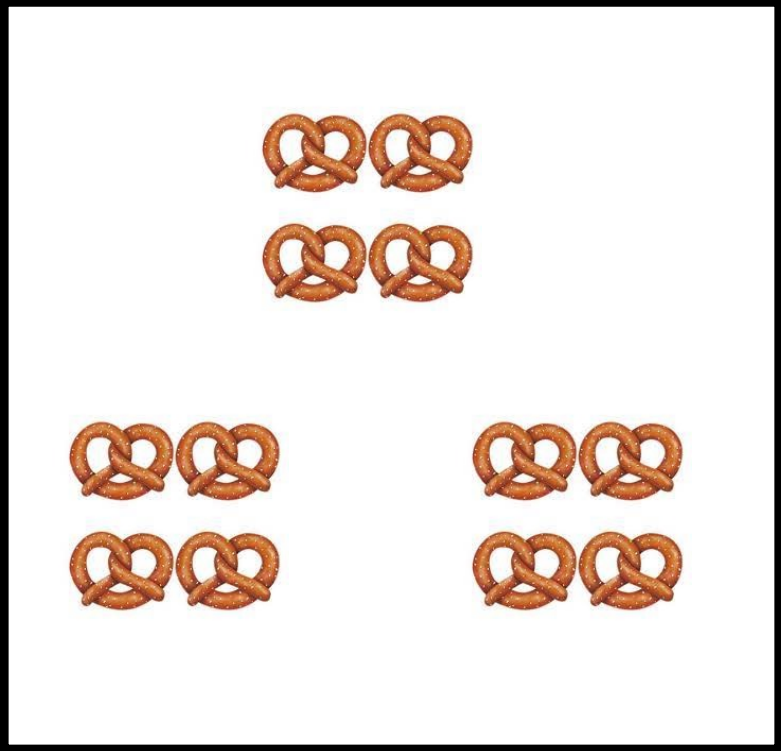
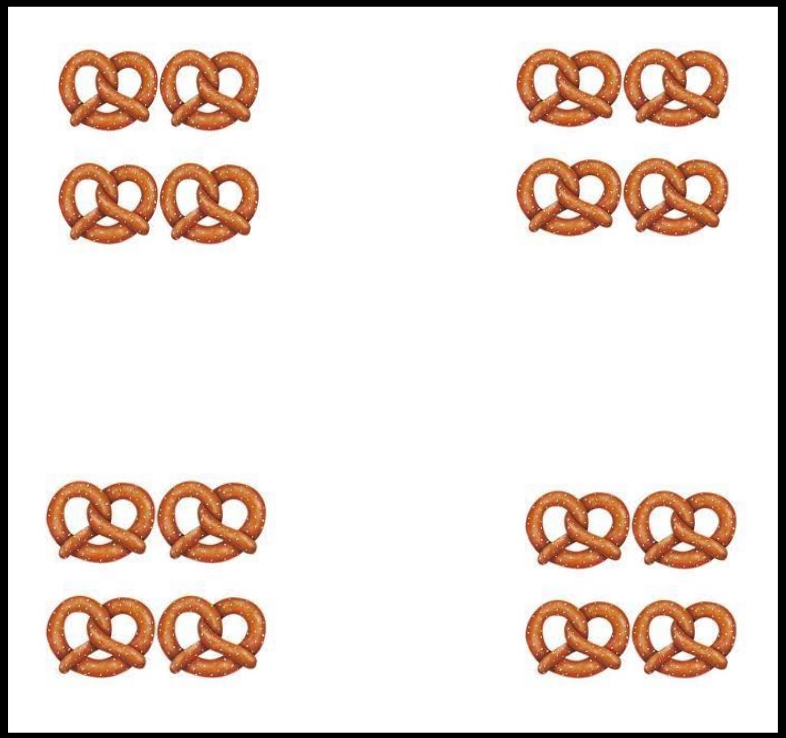


Yes

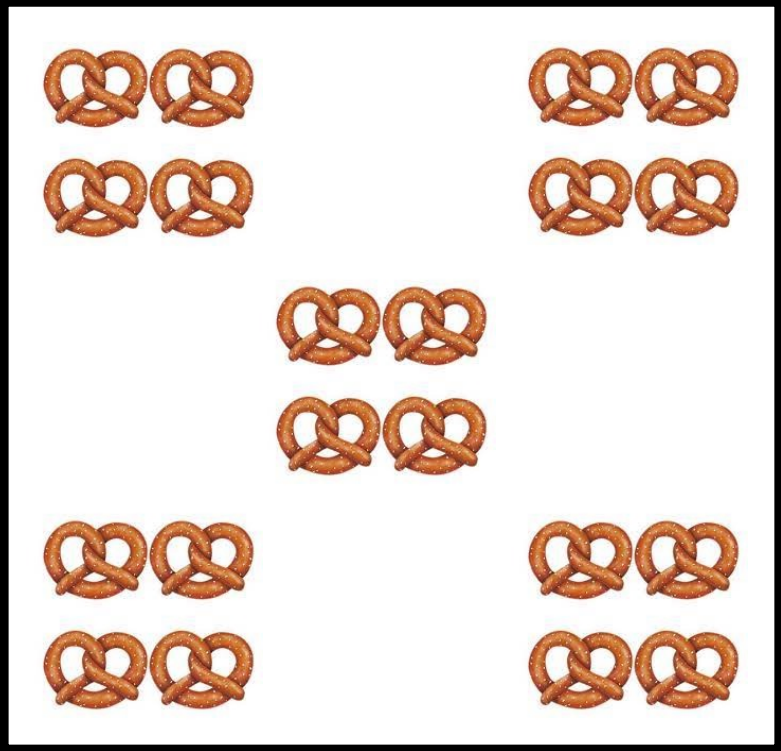
No

Is It Fair?

Emilio



Martha



Yes

No

Is It Fair?

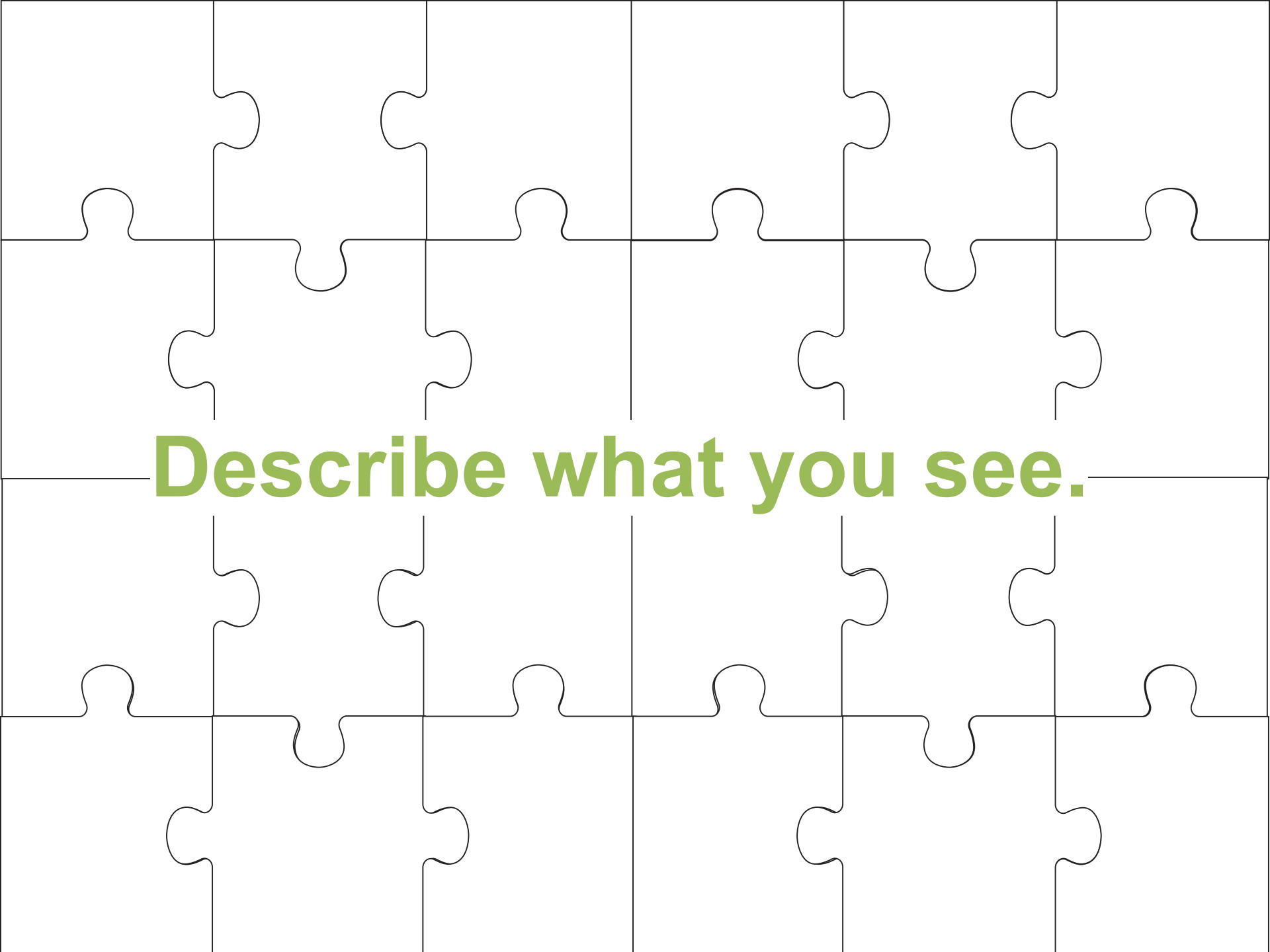
The objective of this context is to develop:

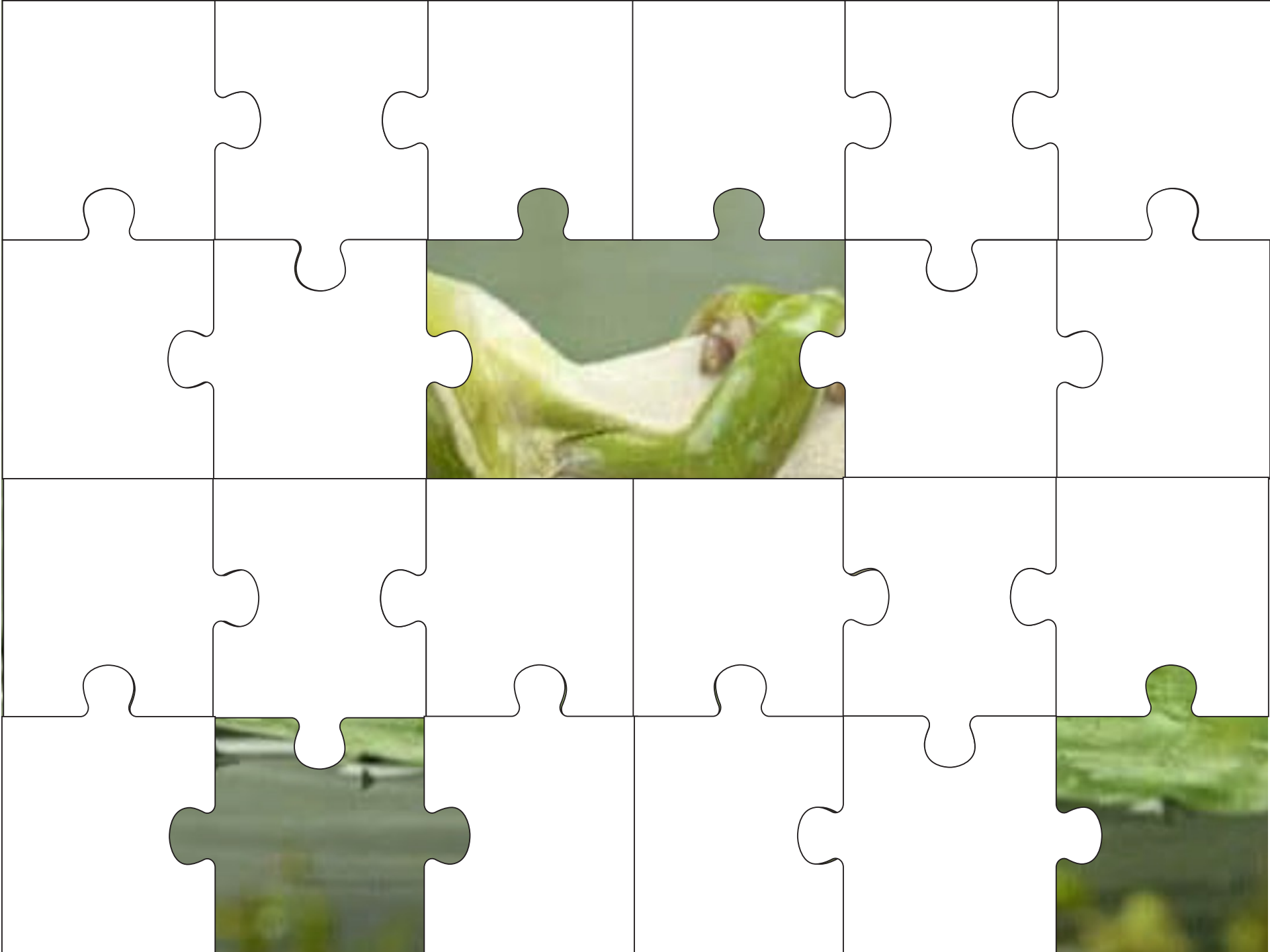
- Important mathematical ideas (comparison, equivalence, unification, etc.)
- Children's ability to communicate and justify their thinking
- Children's ability to handle ambiguity

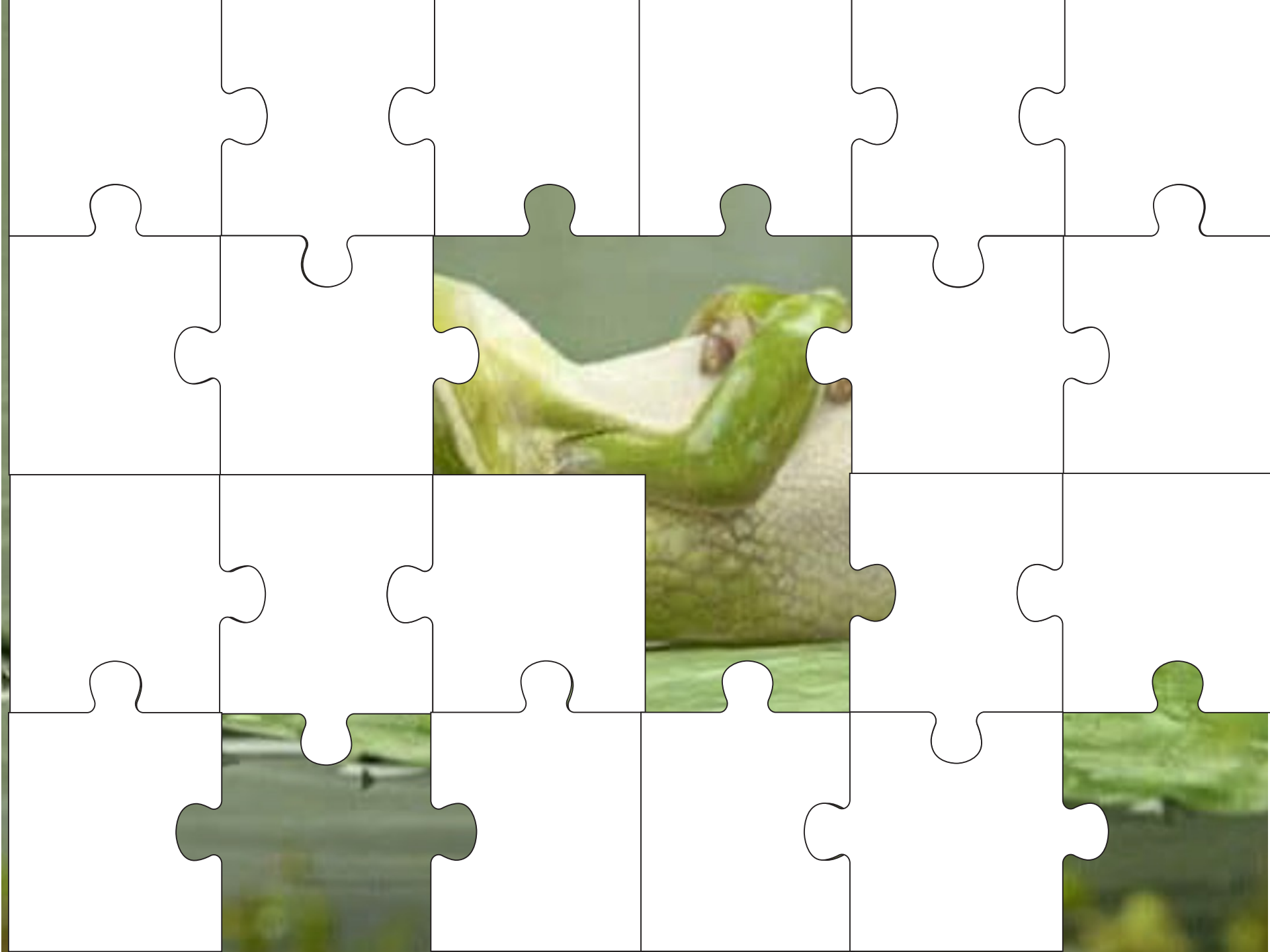
Routine:

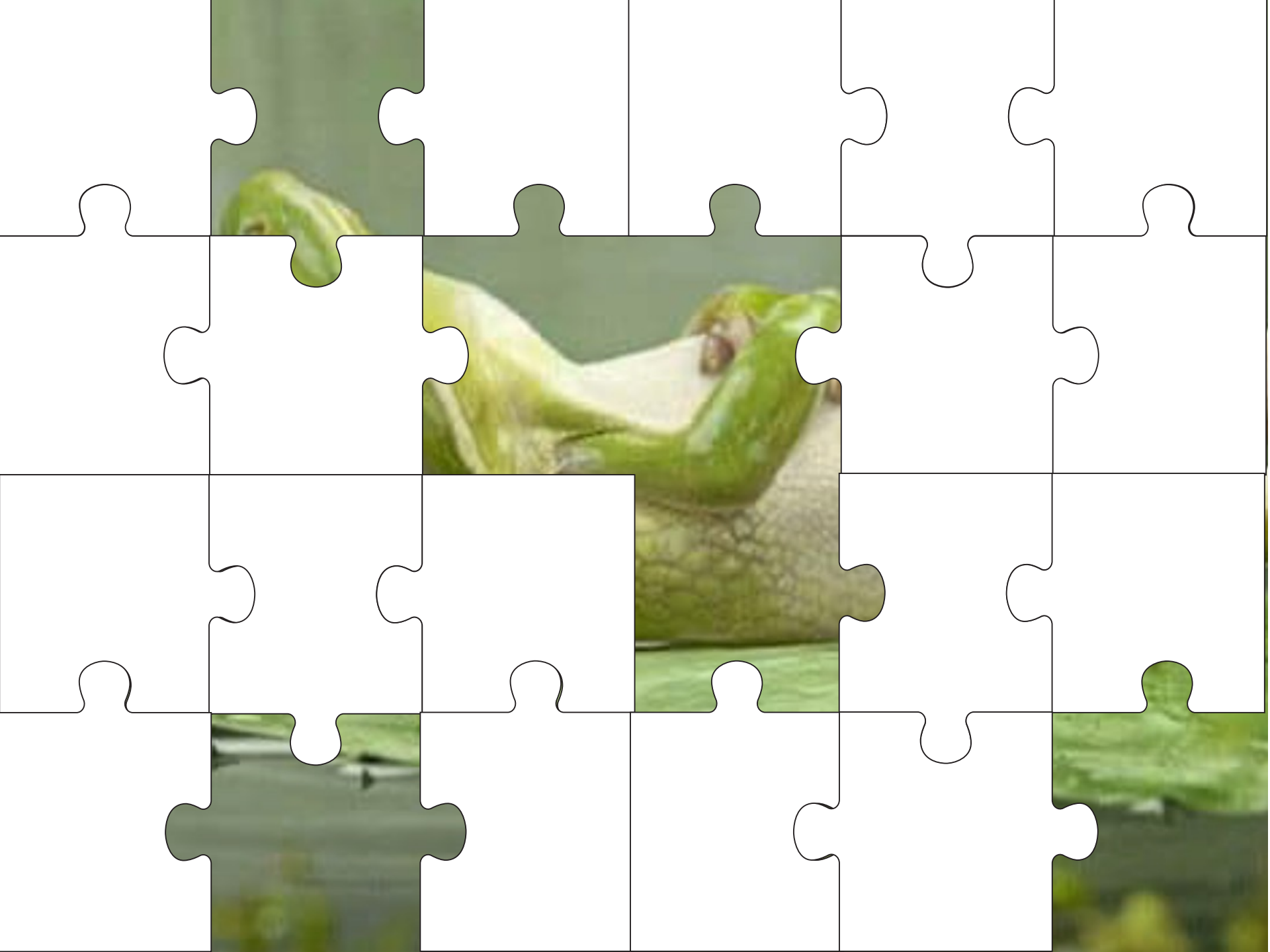
Who Is Hiding?


Who is Hiding?


Describe what you see.







Can you guess who's hiding?

Routine: Who Is Hiding?

- I see something green and white
- I see something shiny
- I see two eyes
- I see water
- I see a mouth
- I see something floating on the water
- It looks like a reptile
- What Natalia said were eyes are not. Now I see one eye.
- I think it's on its side laying down
- His hands are crossed
- I see a face. I think it’s a toad.
- I see a frog resting on a leaf on the water.

Routine: Who Is Hiding?

What does this have to do with math?

It supports children learning how to:

- slow down and observe.
- build the whole from the parts.
- make predictions.
- test out their predictions and revise their thinking if necessary.

Routine: Who Is Hiding?

What have we noticed with children doing this routine:

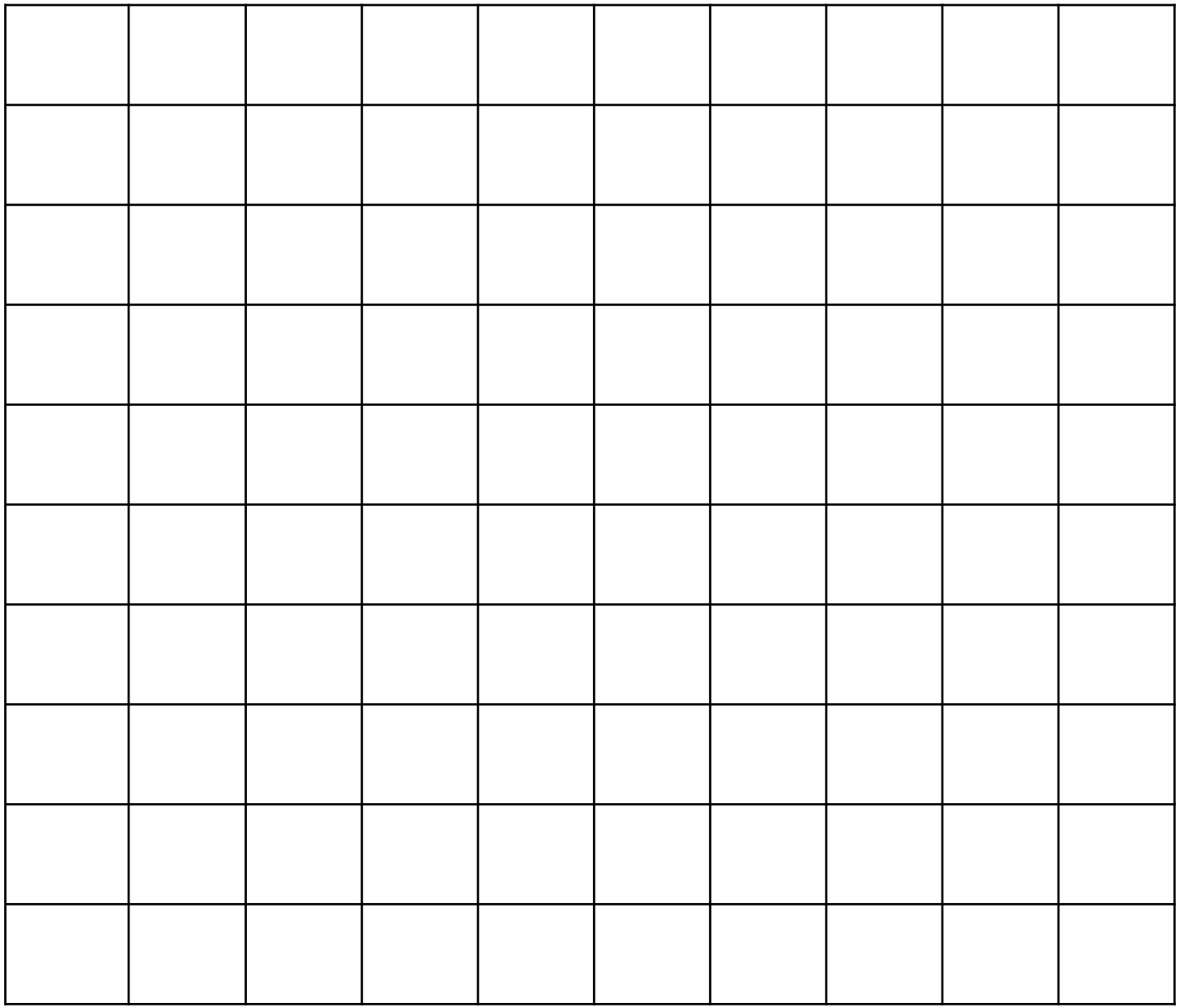
- There is puzzlement.
- There is joy.

They say things like:

- *This is the best lesson ever!*
- *Can we do another one?*
- *This is 100% fun!*
- *I could do this all day long!*

Routine:

Quick Images with the 100-Frame



More, Less, or Same?

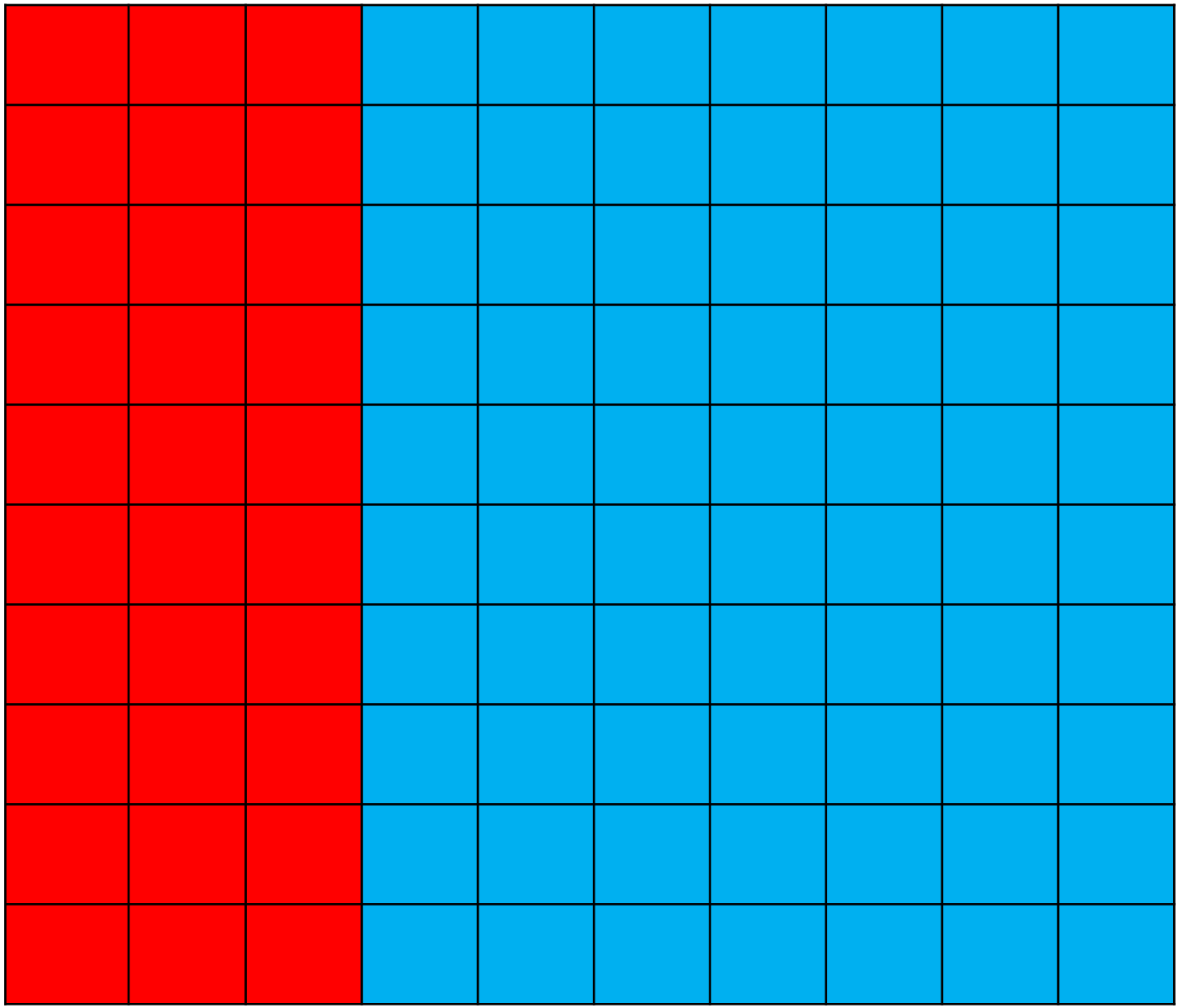
RED

More

Less

(Kinder)

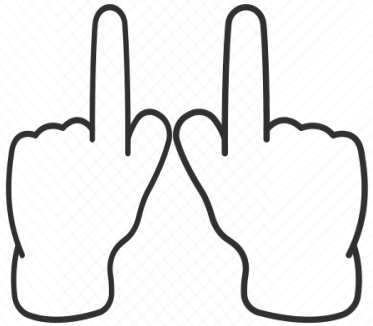
Same

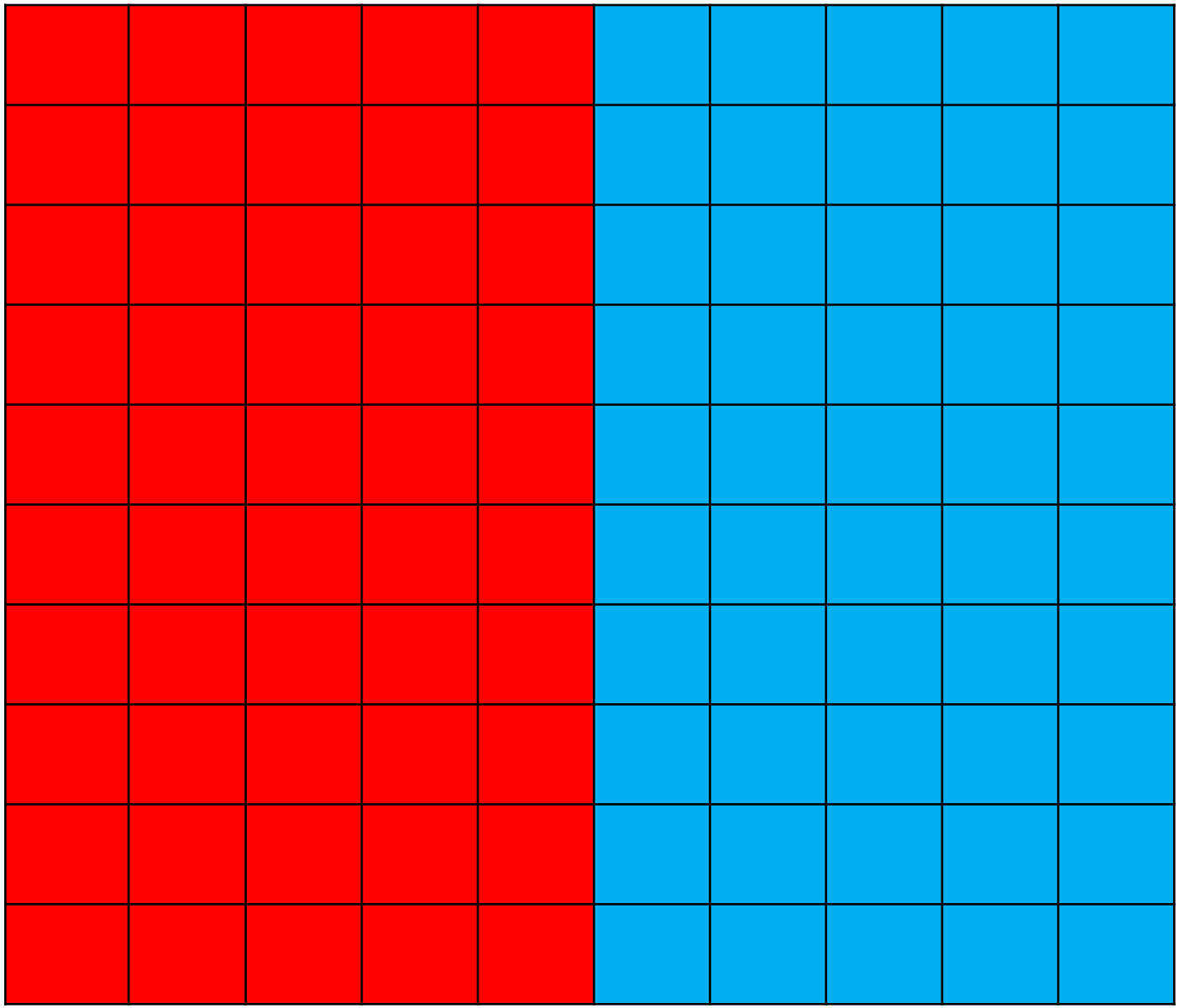


More

Less

Same

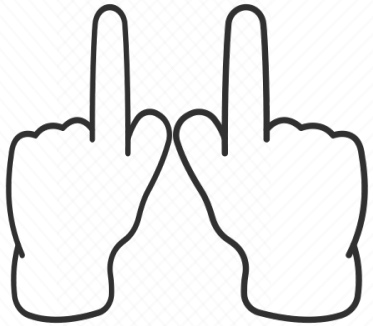


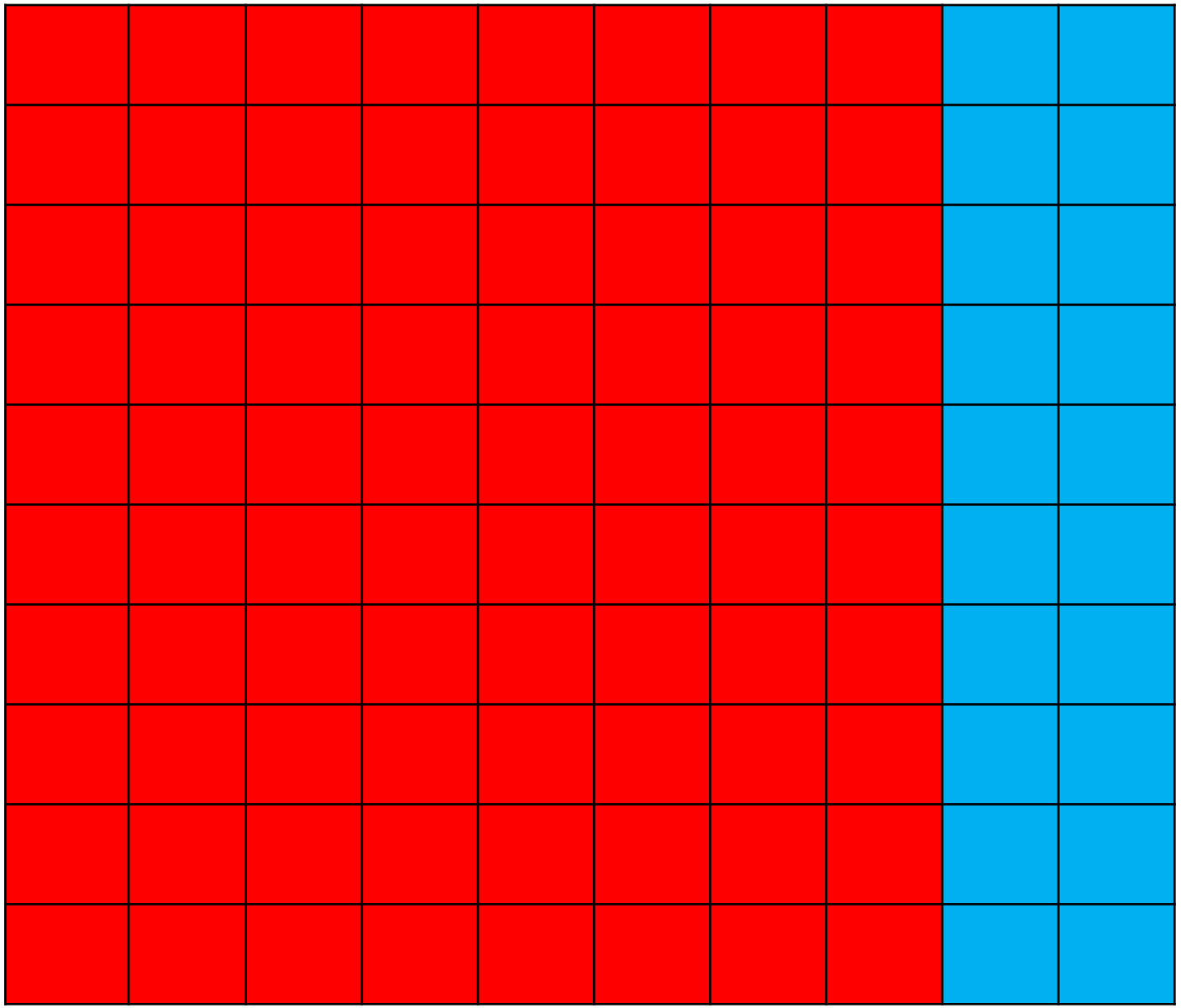


More

Less

Same

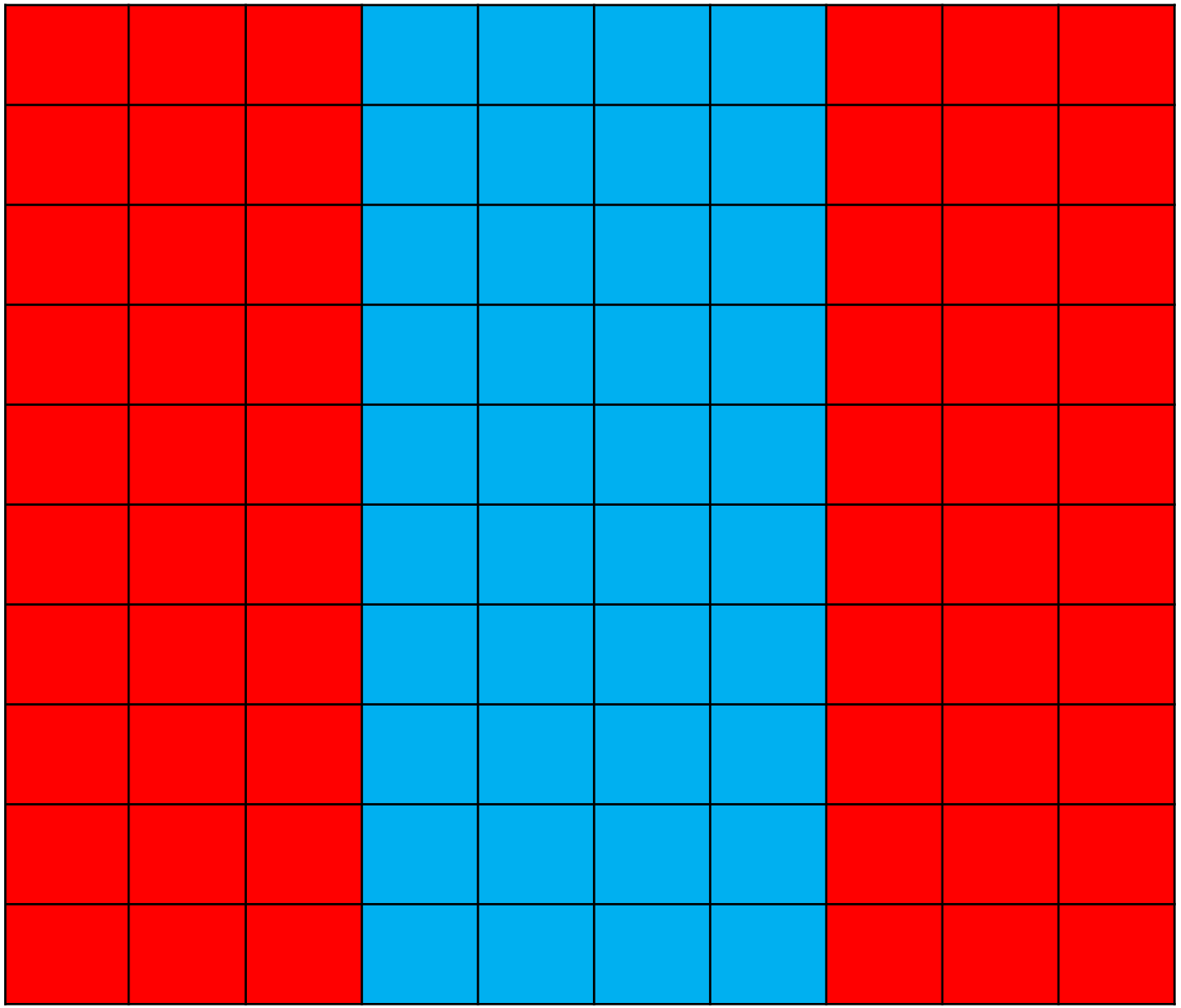




More

Less

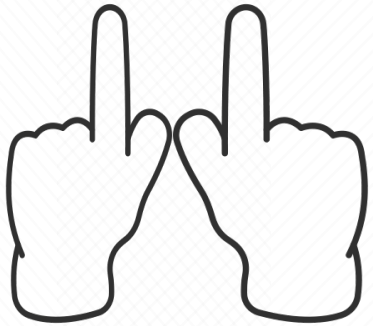
Same

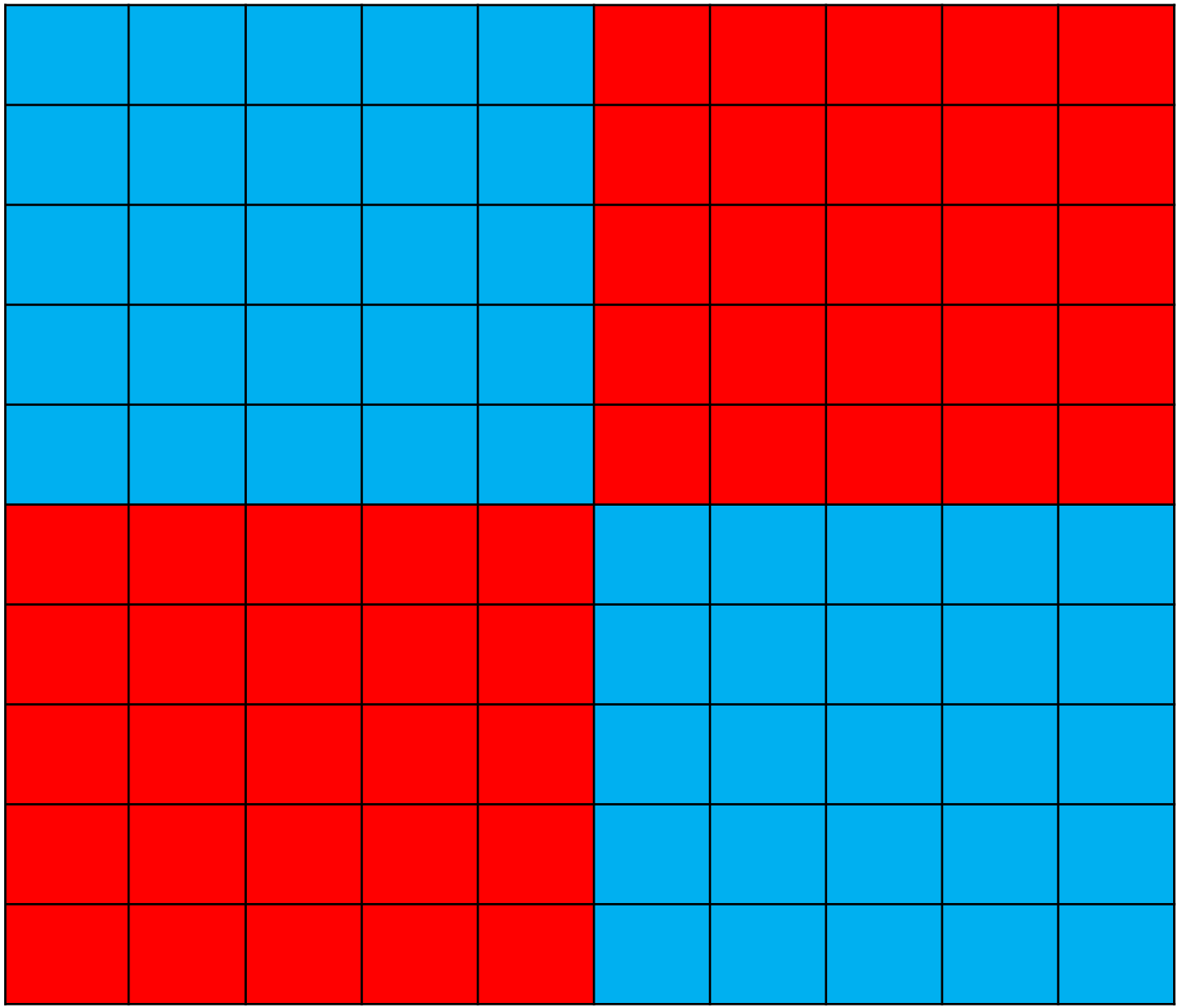


More

Less

Same

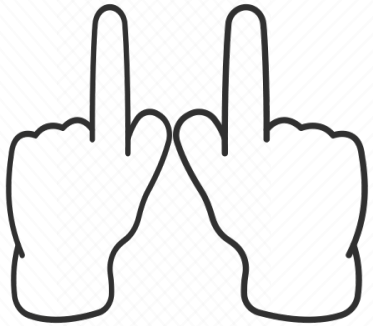




More

Less

Same



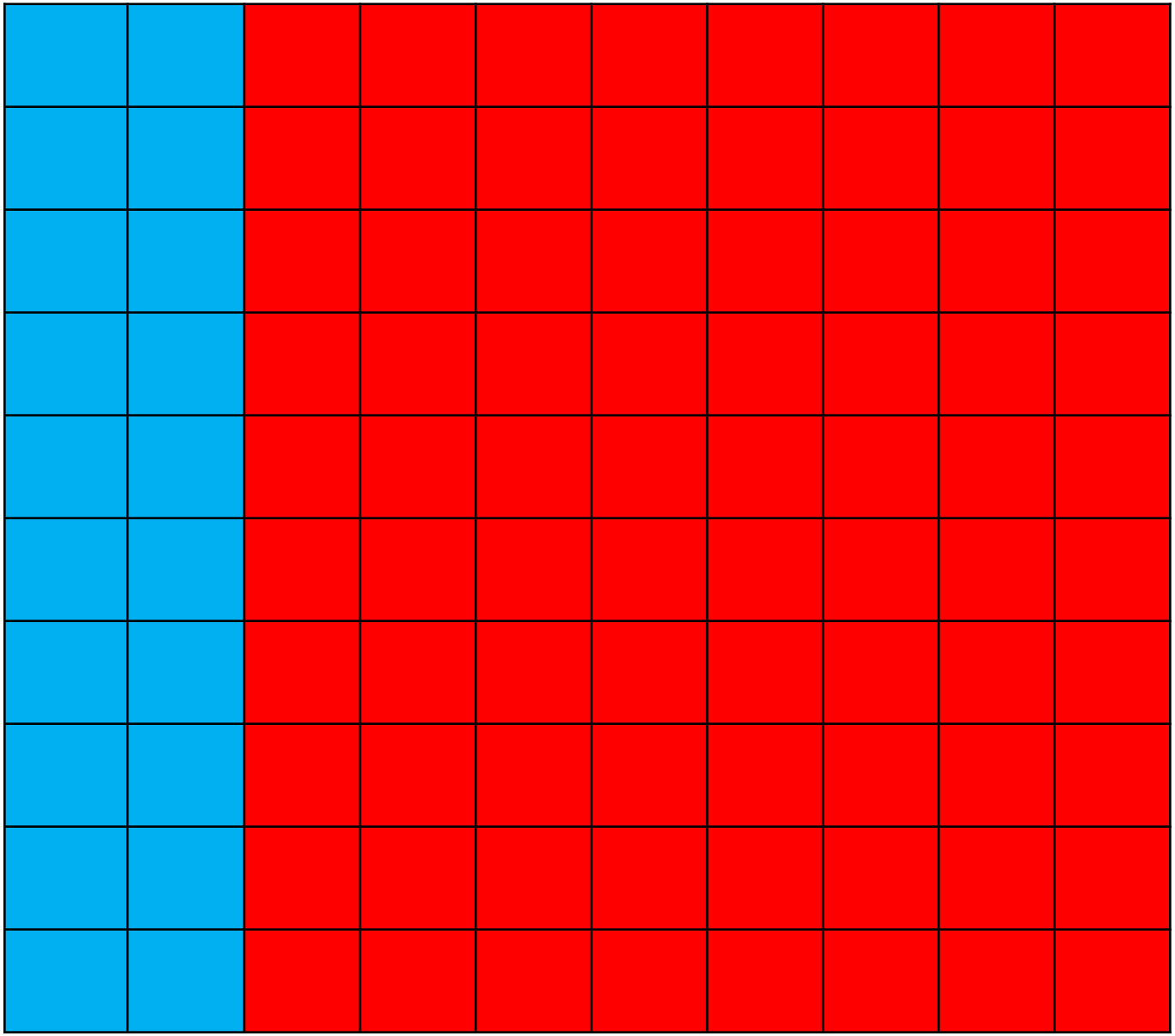
Mathematical Expressions

False

True

(First and Second grade)

$$20 + 80$$

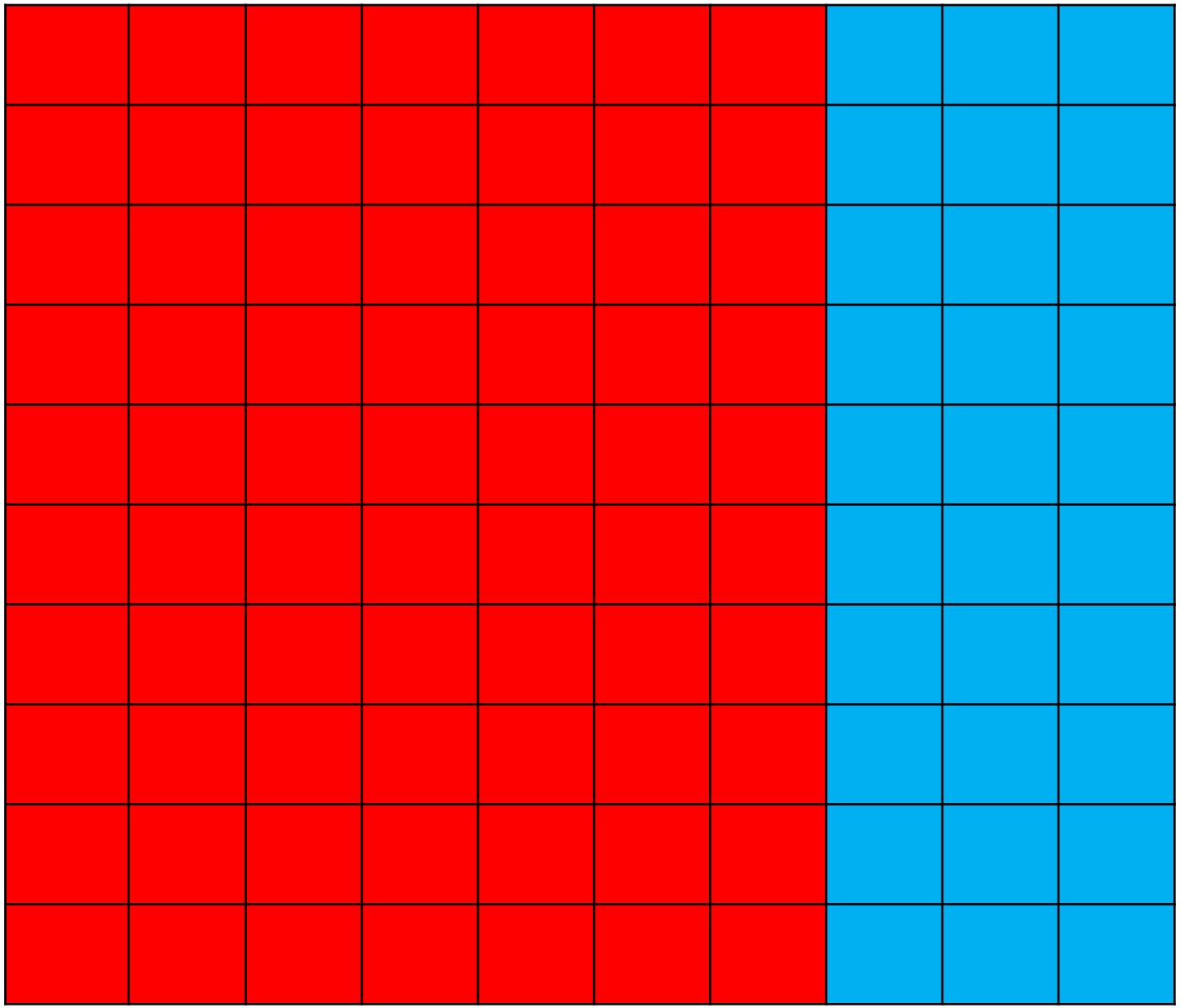


20 + 80

False

True

80 + 20

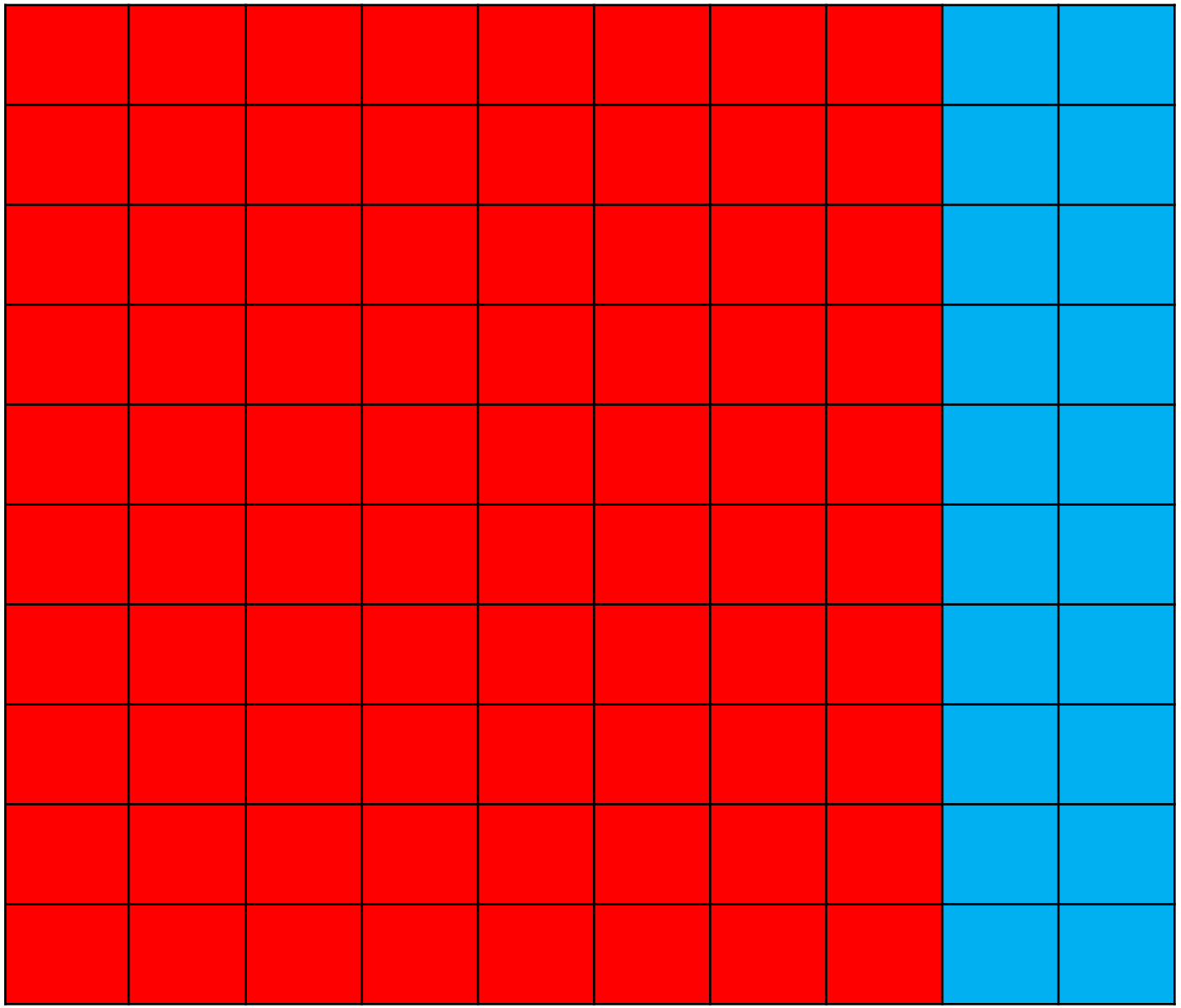


80 + 20

False

True

$$20 + 80$$

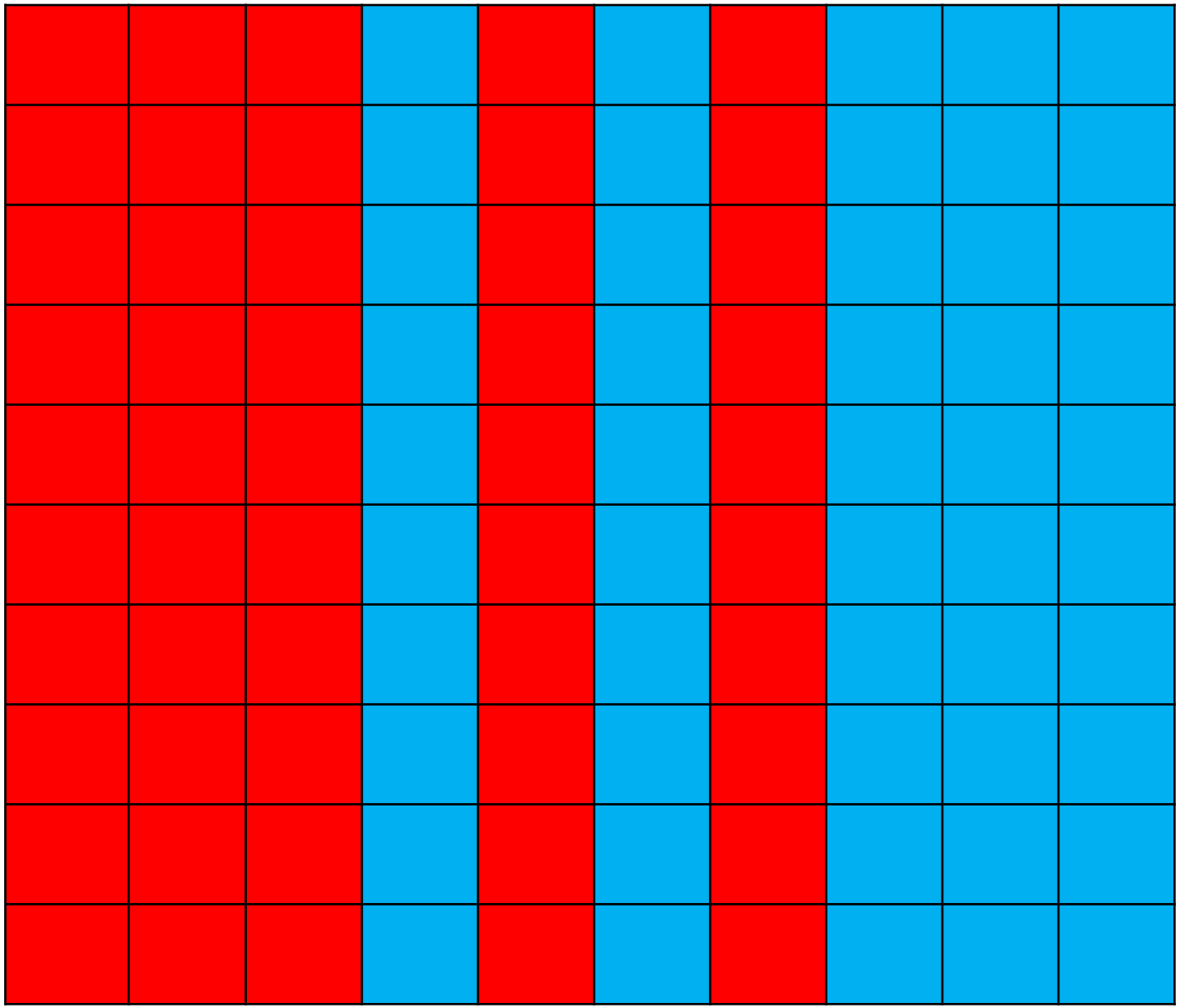


20 + 80

False

True

$$40 + 60$$

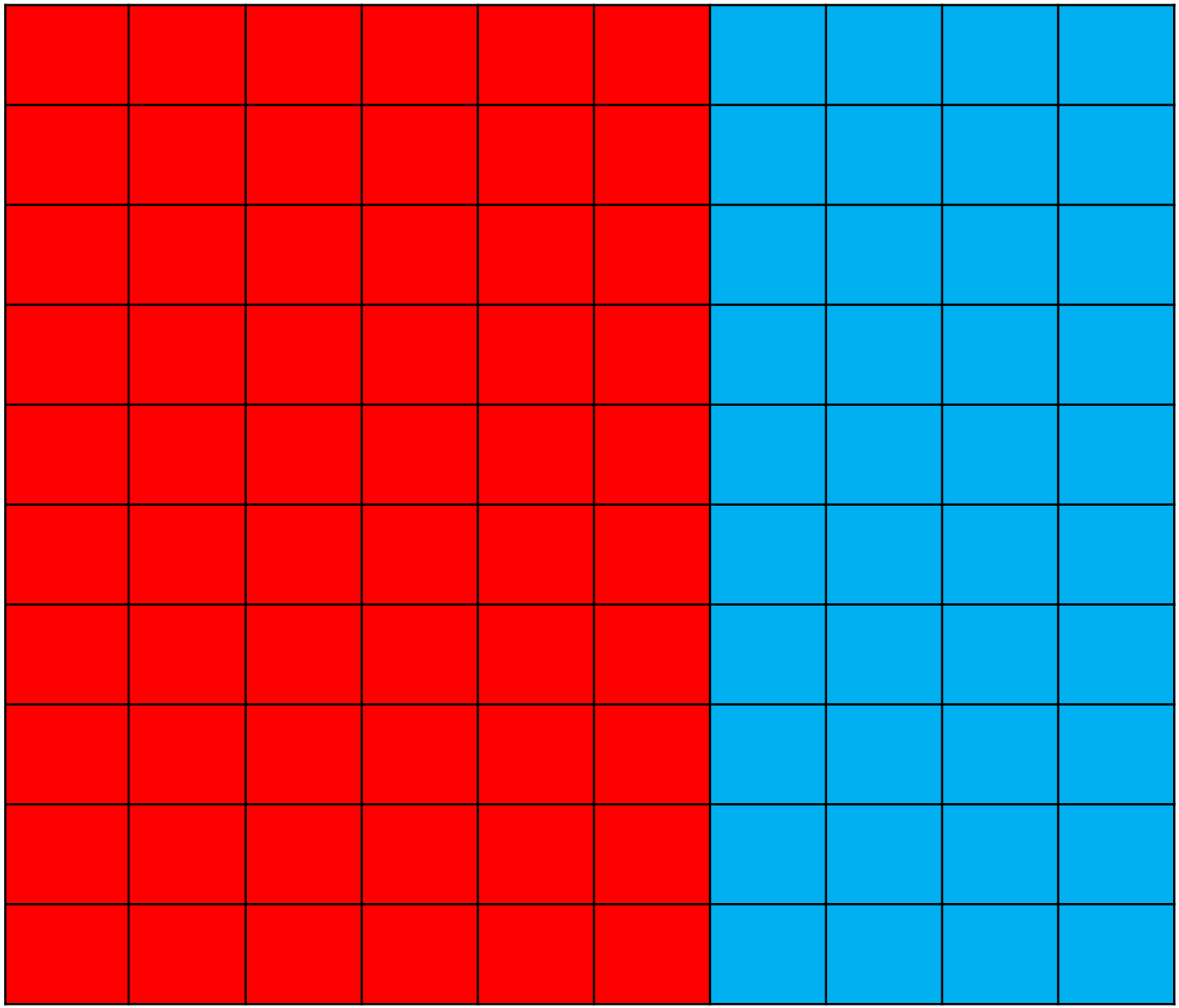


40 + 60

False

True

$$40 + 60$$

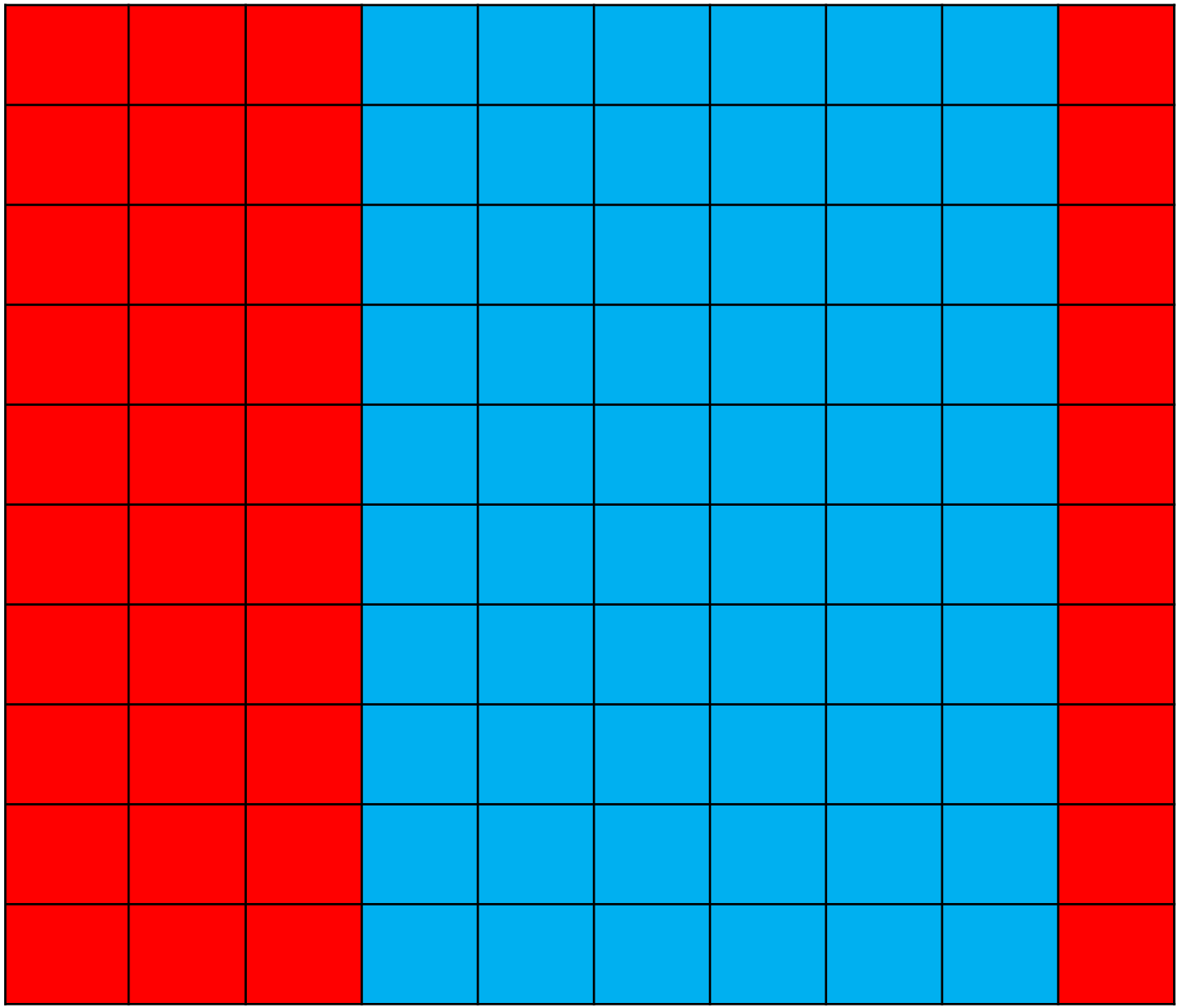


40 + 60

False

True

$$40 + 60$$

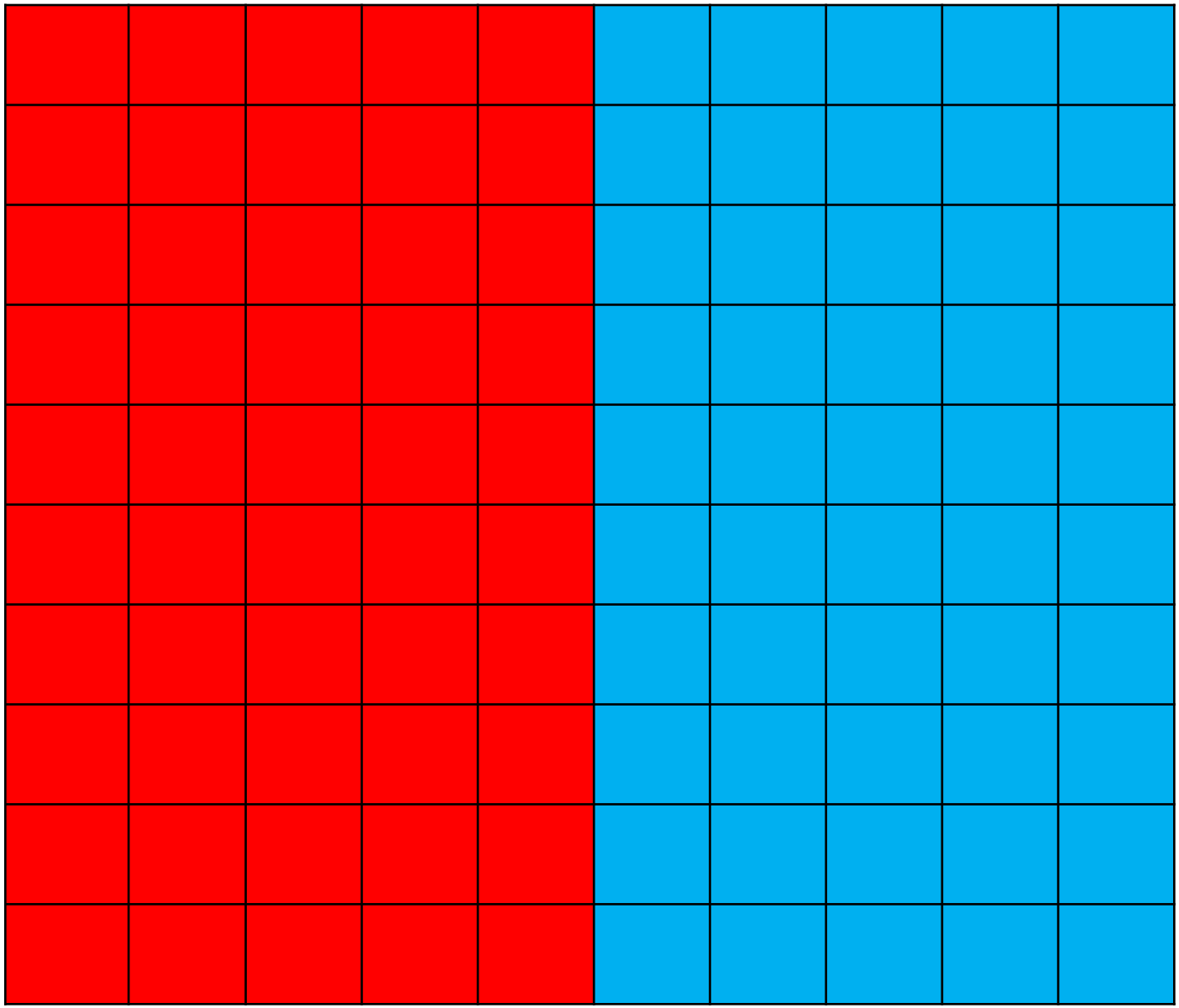


40 + 60

False

True

$$40 + 60$$



40 + 60

False

True

Quick Images with the 100-Frame: False/ True

Three key things to consider when using this routine:

1. How you introduce the context matters
2. How you structure the activity is critical
3. Assessing as you go- using assessment to inform teaching choices.

Quick Images with the 100-Frame: False/ True

The objective of this context is to develop:

- Important mathematical ideas (comparison, equivalence, unification, etc.)
- Children's ability to communicate and justify their thinking
- Children's ability to handle ambiguity

Final comments on routines to promote thinking

Learning mathematics is not a process of acquiring a set of facts or procedures, but rather a process of becoming someone who participates in a community that does mathematical work.

People use mathematics to:

- Collaborate and communicate with others.
- Make sense of problems that are interesting and complex.
- Justify your ideas and work to convince others of the validity of those ideas.
- Make sense of the justifications put forward by others to understand, critique, and build on their thinking.

- We believe in the power of play in learning.
- We believe the power of play can be generated through rich contexts.
- We believe that the role of the teacher is to find ways to empower children to think—that's the essence of effective pedagogy