



BALANCED NUMERACY

*A vision for developing mathematical
competence*

AND SO...?

- What is a balanced numeracy program?

FINDING BALANCE IN...

➤ content

➤ process

➤ product

CONTENT: WHAT MATHEMATICAL CONCEPTS

SHOULD KIDS KNOW

➤ by the end of grade 1?

➤ by the end of grade 2?

➤ by the end of grade 3?

CONTENT: WHAT MATHEMATICAL EXPERIENCES

SHOULD KIDS HAVE

➤ every day?

➤ every week?

➤ every month?

➤ every term?

PROCESS: HOW SHOULD WE LEARN?

- guided, supported, independent
- whole group, small group, partners, alone

PRODUCTS: HOW SHOULD WE SHOW OUR

LEARNING?

➤ manipulatives

➤ drawing

➤ oral language

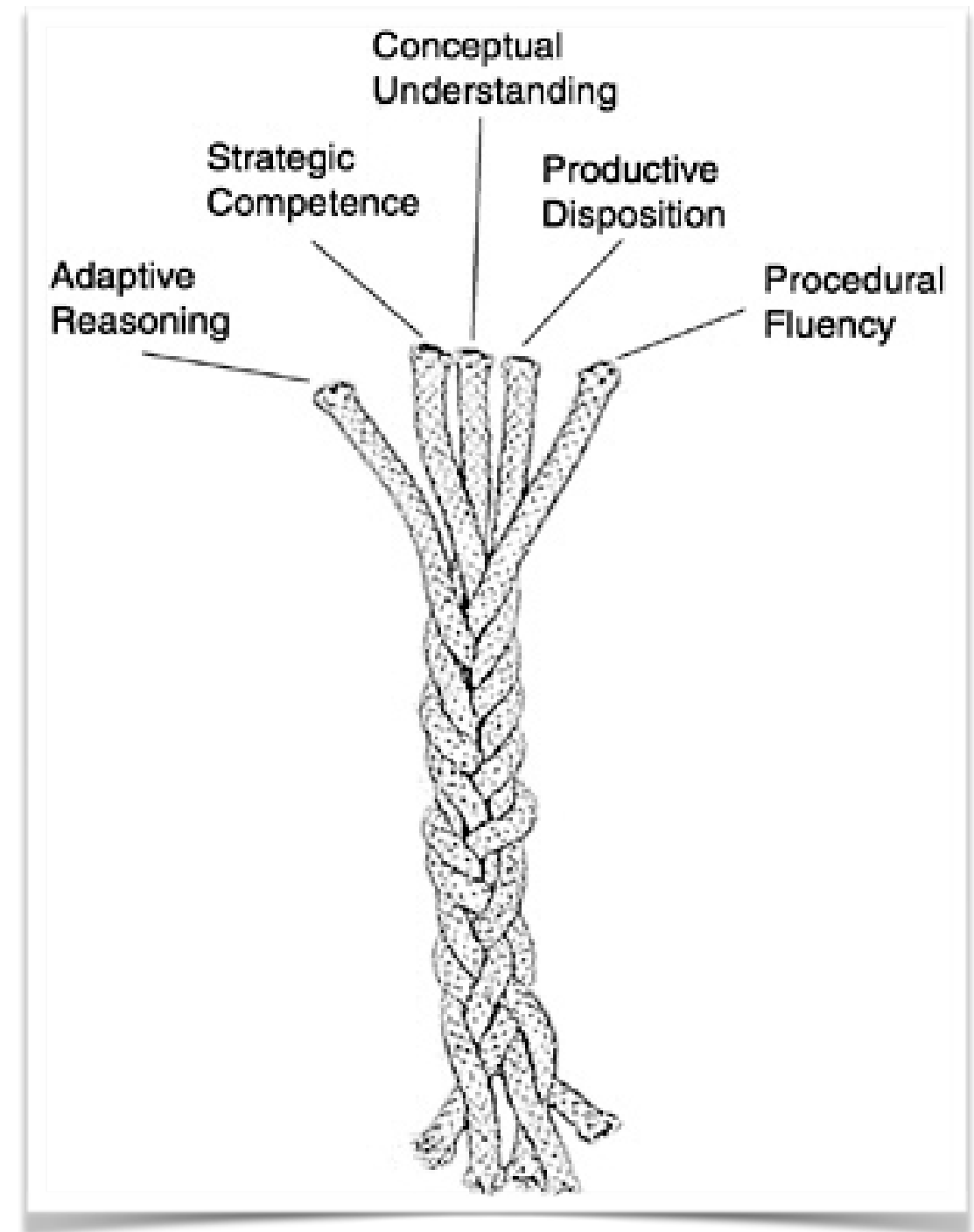
➤ written work

WHAT IS THE GOAL?

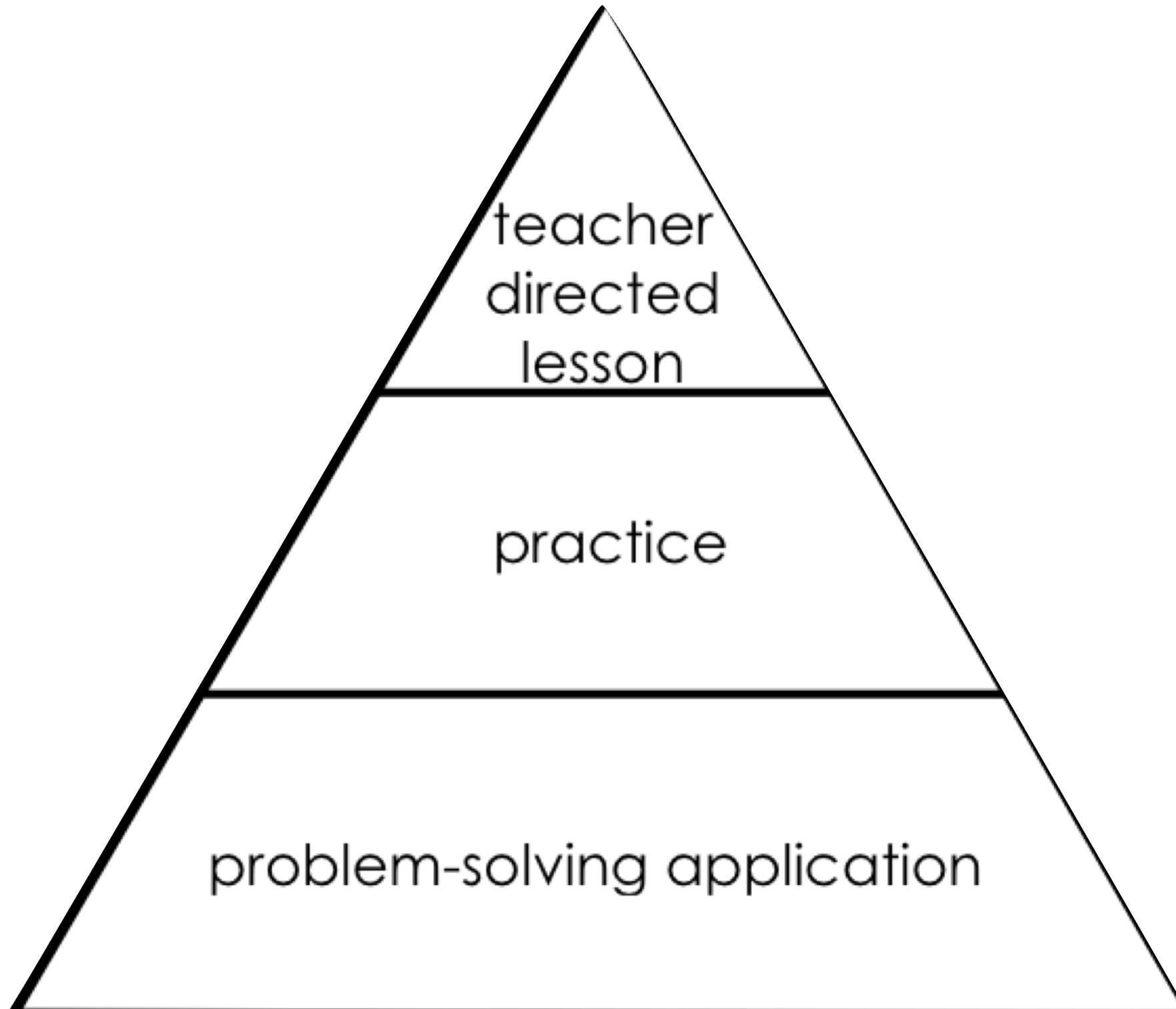
- What does mathematical competence look like?
- How can we assess it?

MATHEMATICAL COMPETENCE

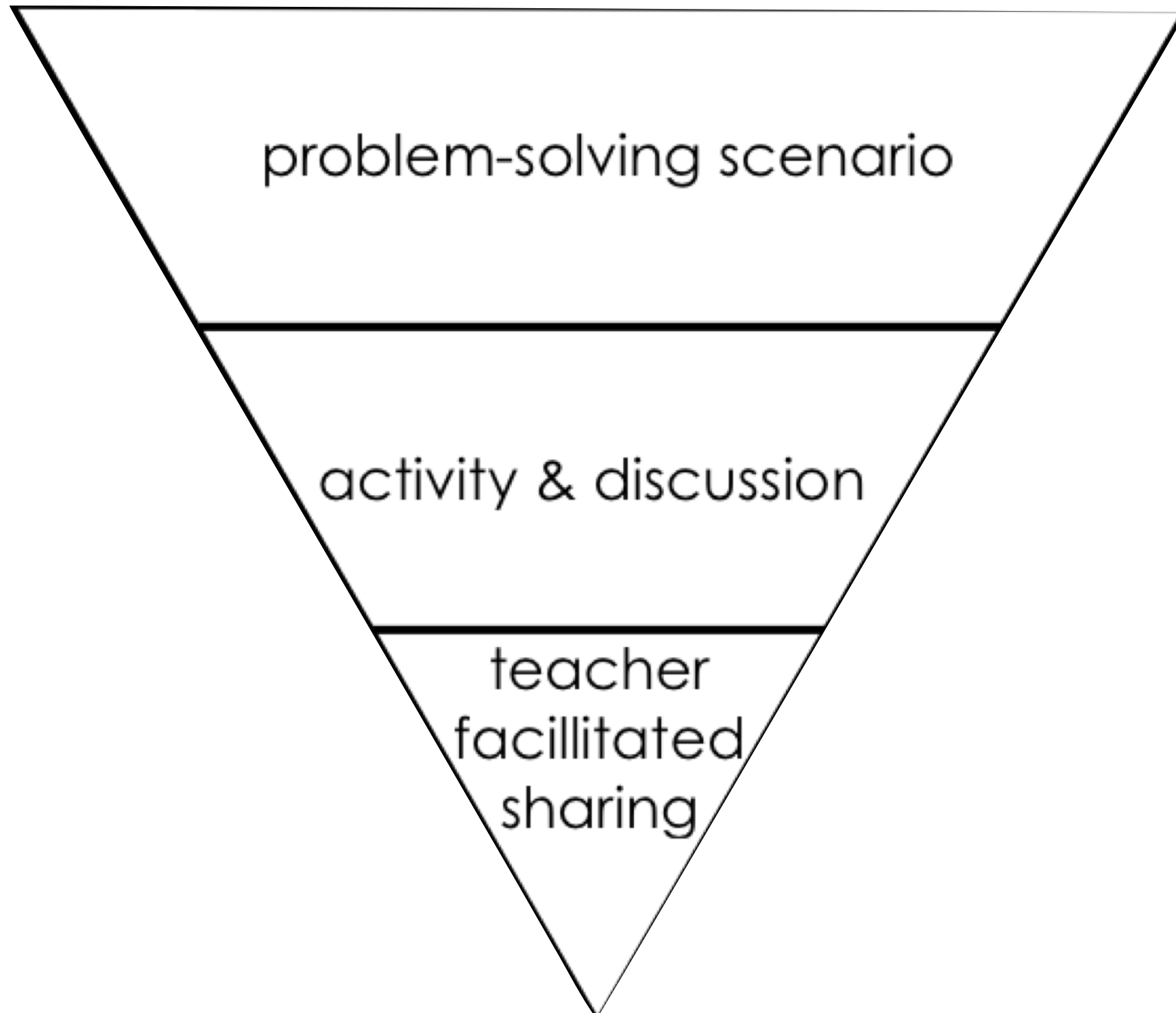
- Conceptual understanding
- Fluency with the facts
- Strategic competence
- Adaptive reasoning
- Productive disposition



THAT WAS THEN...



THIS IS NOW...



One Is a Snail Ten Is a Crab



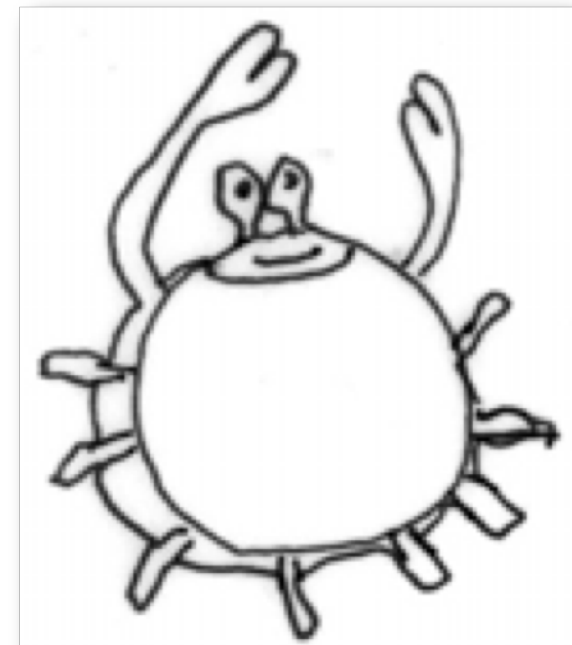
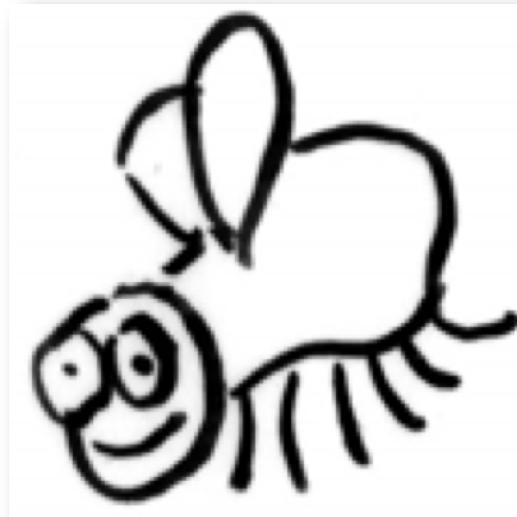
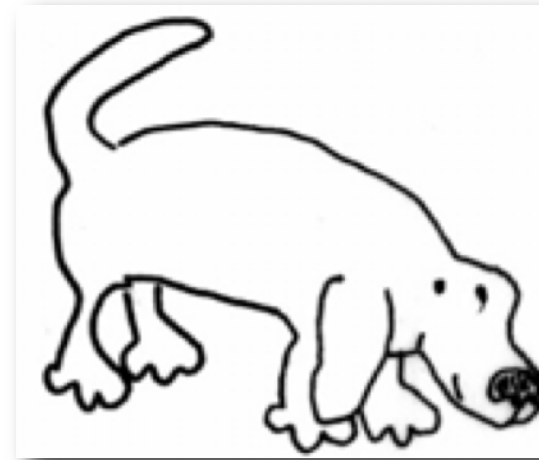
HOW MANY WAYS...

There are 10 feet on the beach.

What might the creatures be?

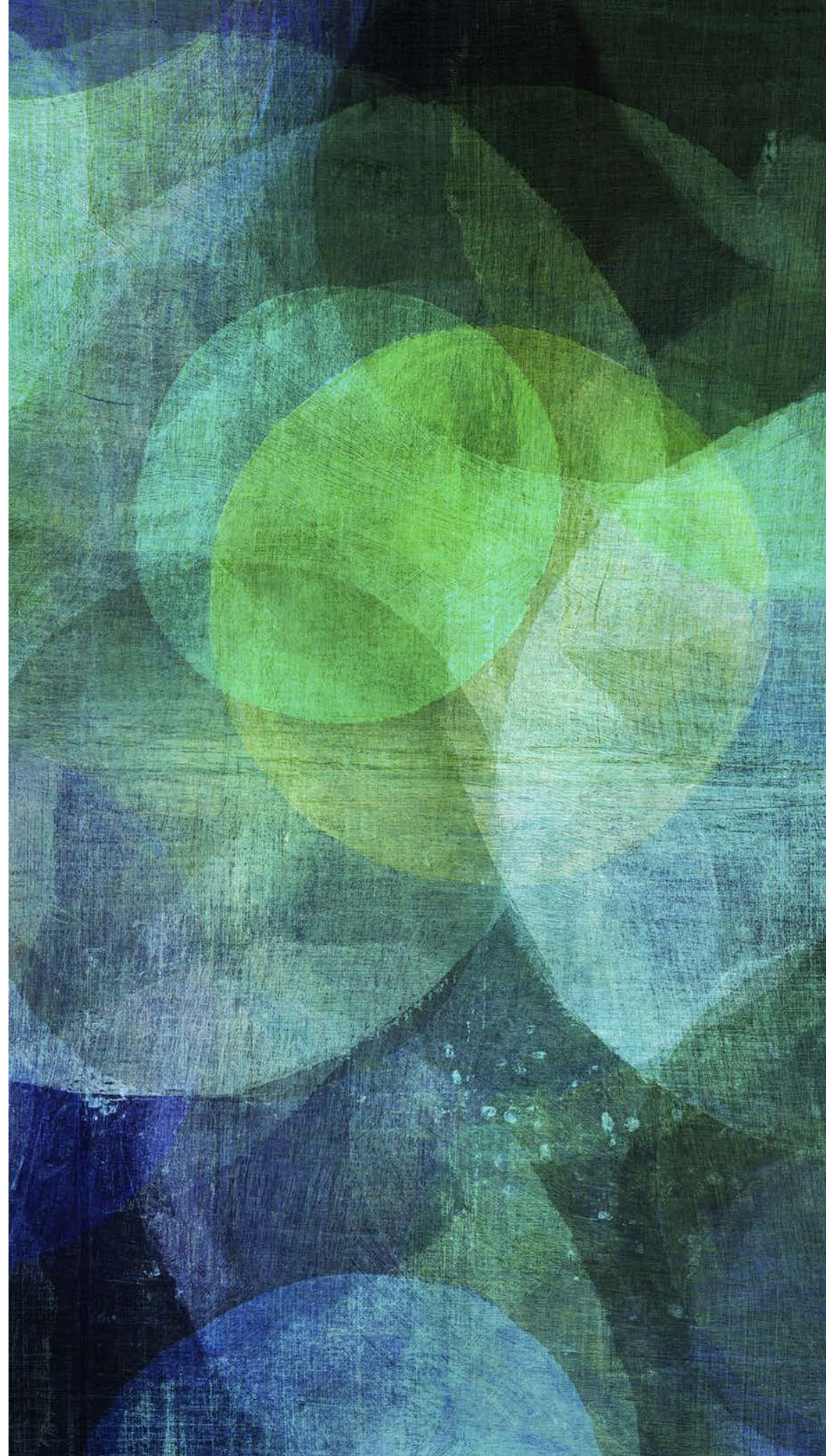
How many ways can you find?

number sense



GOOD QUESTIO NS

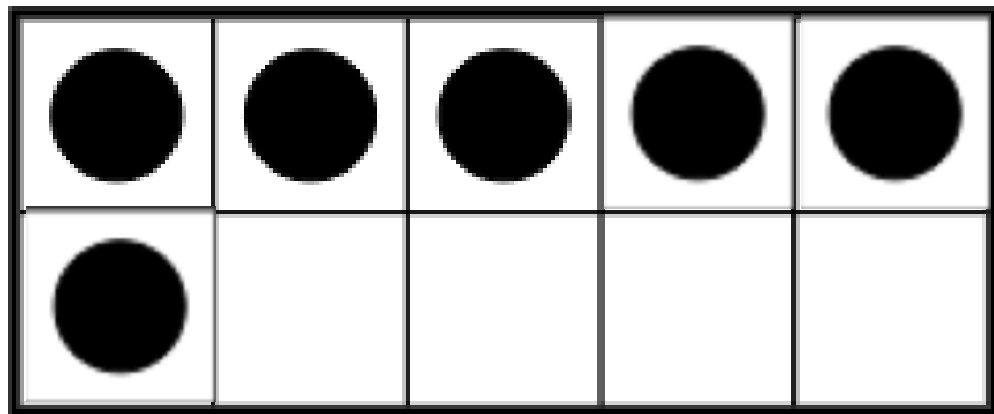
.....
promoting deep thinking



WHAT MAKES A GOOD QUESTION?

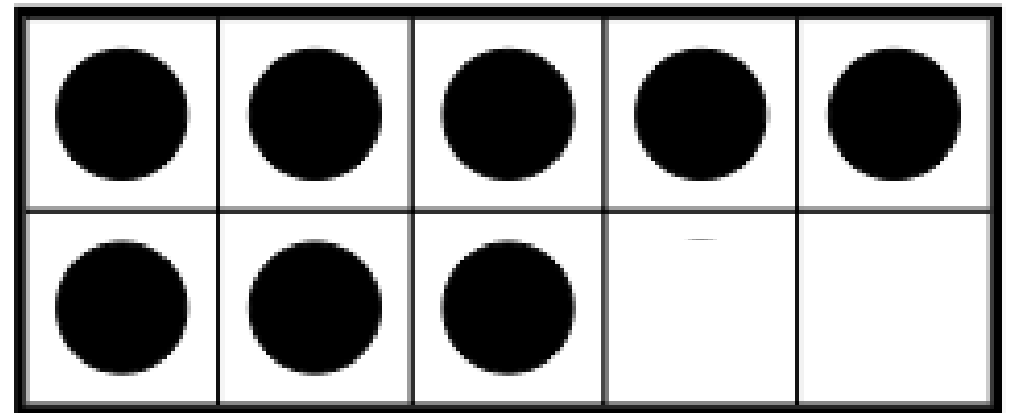
- Open-ended
- Hands on
- Engaging
- Supports connection-making
- Important math

HOW CAN YOU FIND THE SUM?



6

+



8

HOW CAN YOU....

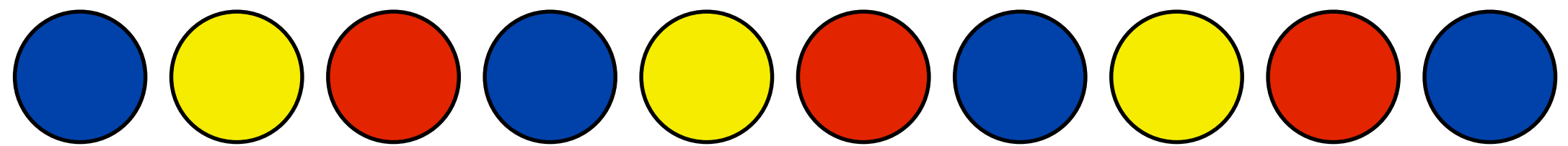
► How can you find the sum of 36 and 48?

WHAT DO YOU KNOW ABOUT...

- What do you know about the number 24?
- How can you show it?

PREDICT DOWN THE LINE...

.....



1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

WHAT DO YOU NOTICE?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

WHAT COULD IT BE?

- The difference between 2 numbers is 5.
- What could the numbers be?
- How many ways can you find?

10 cherries



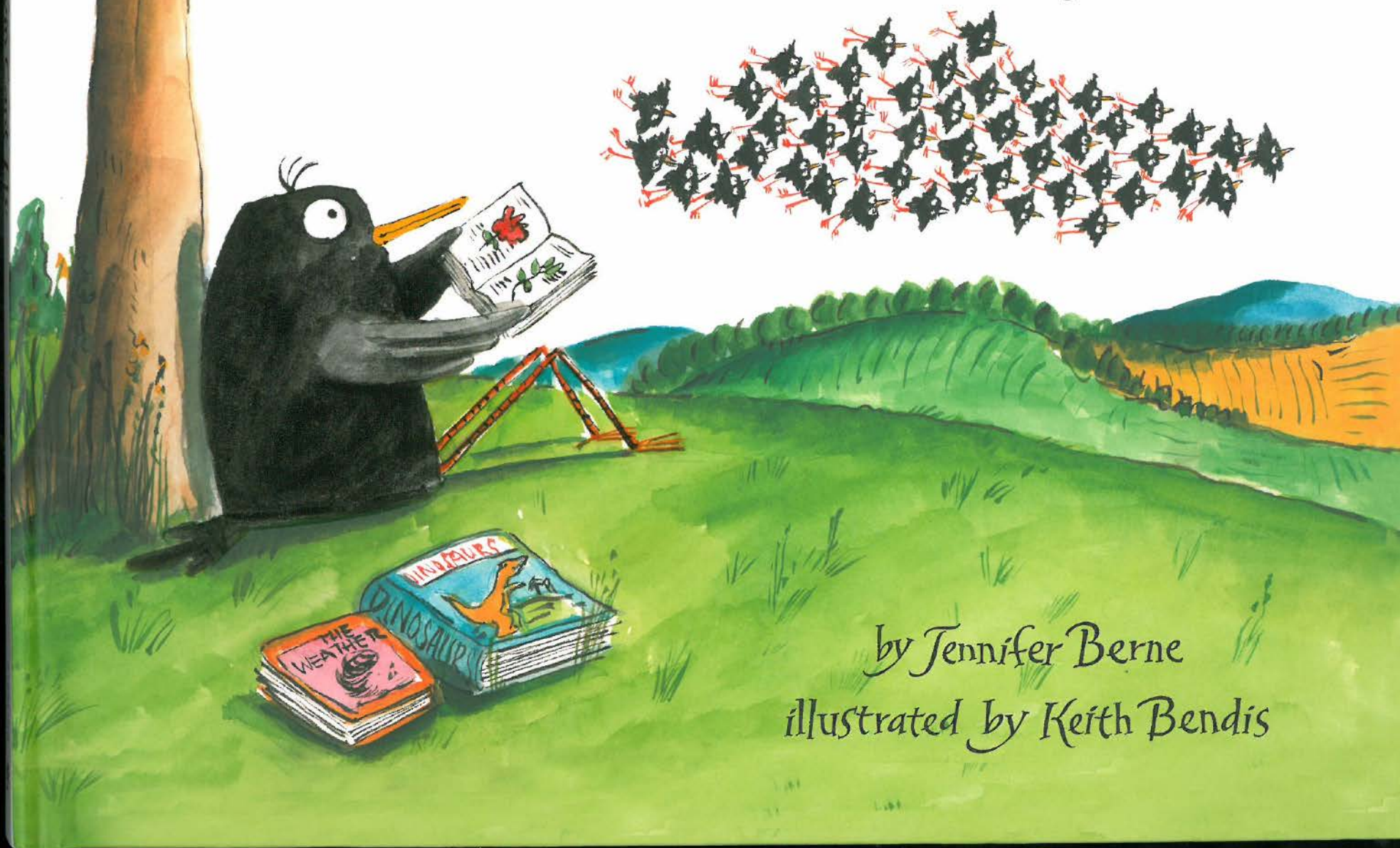
100 cherries





Calvin Can't Fly

The Story of a Bookworm Birdie

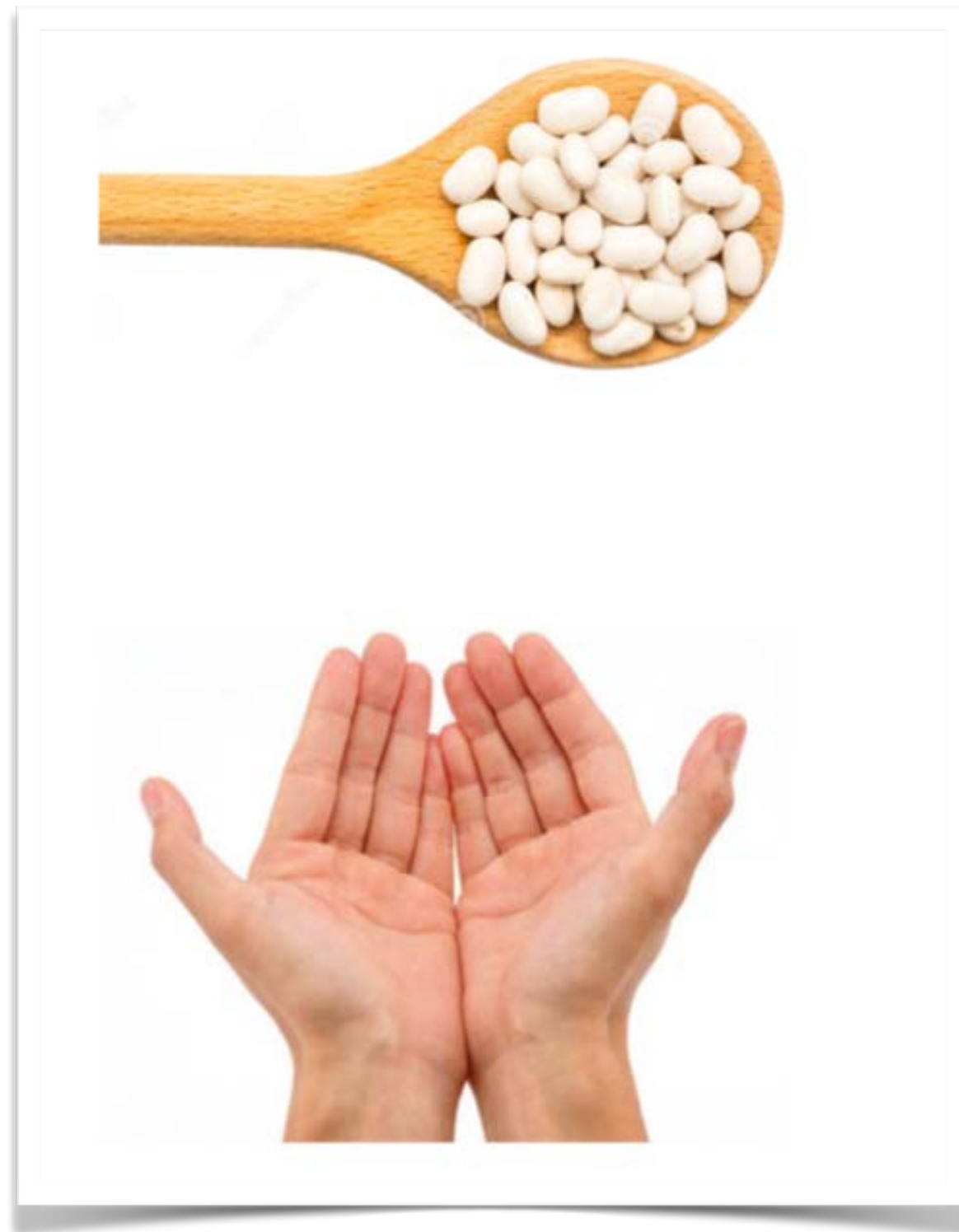


by Jennifer Berne
illustrated by Keith Bendis





SCOOP AND COUNT





ADDING WITH PARTIAL SUMS

		3	6
		4	8
<hr/>			
		7	0
		1	4
<hr/>			
		8	4

ADDING WITH PARTIAL SUMS

+

7

8

5

7

1

2

0

1

5

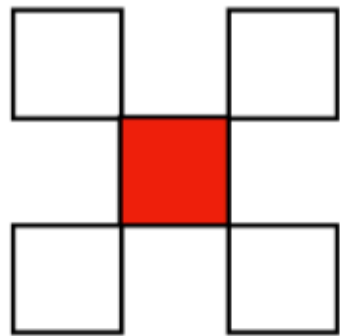
1

3

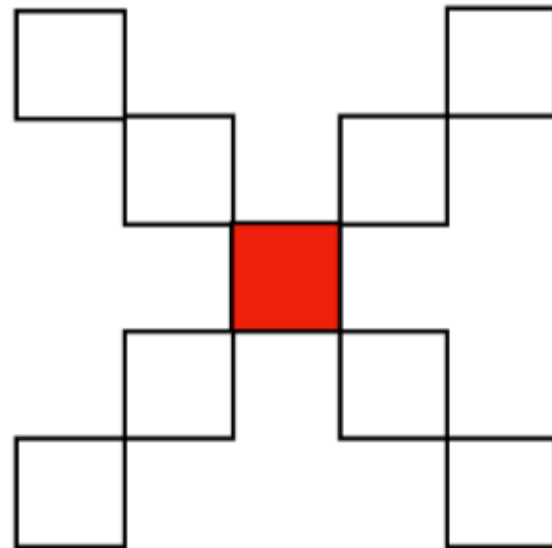
5

WHAT DO YOU NOTICE?

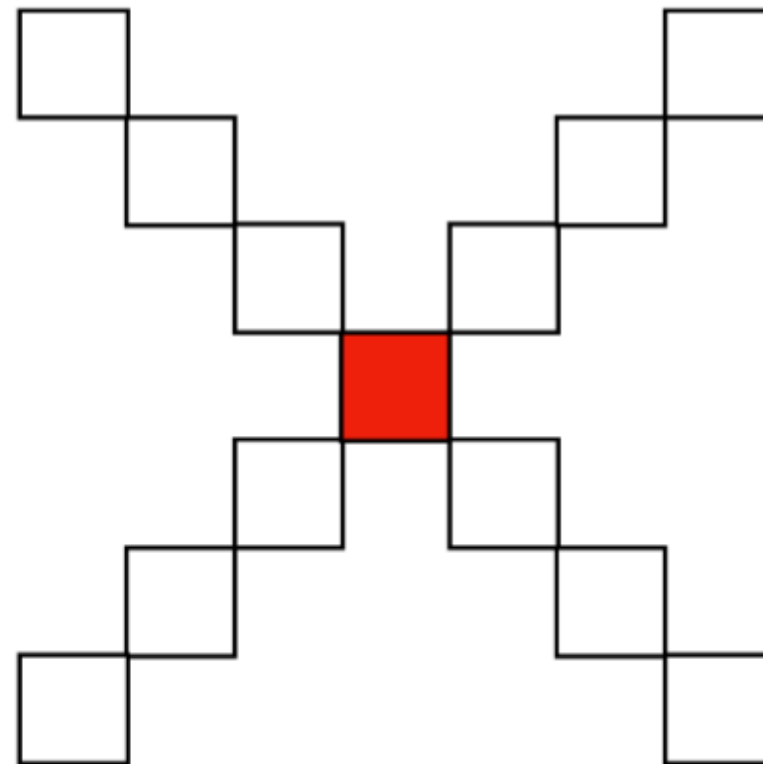
Term 1



Term 2



Term 3



WHAT DO YOU NOTICE? WHAT PATTERNS

.....
CAN YOU FIND?

1 1 2

1 2 3

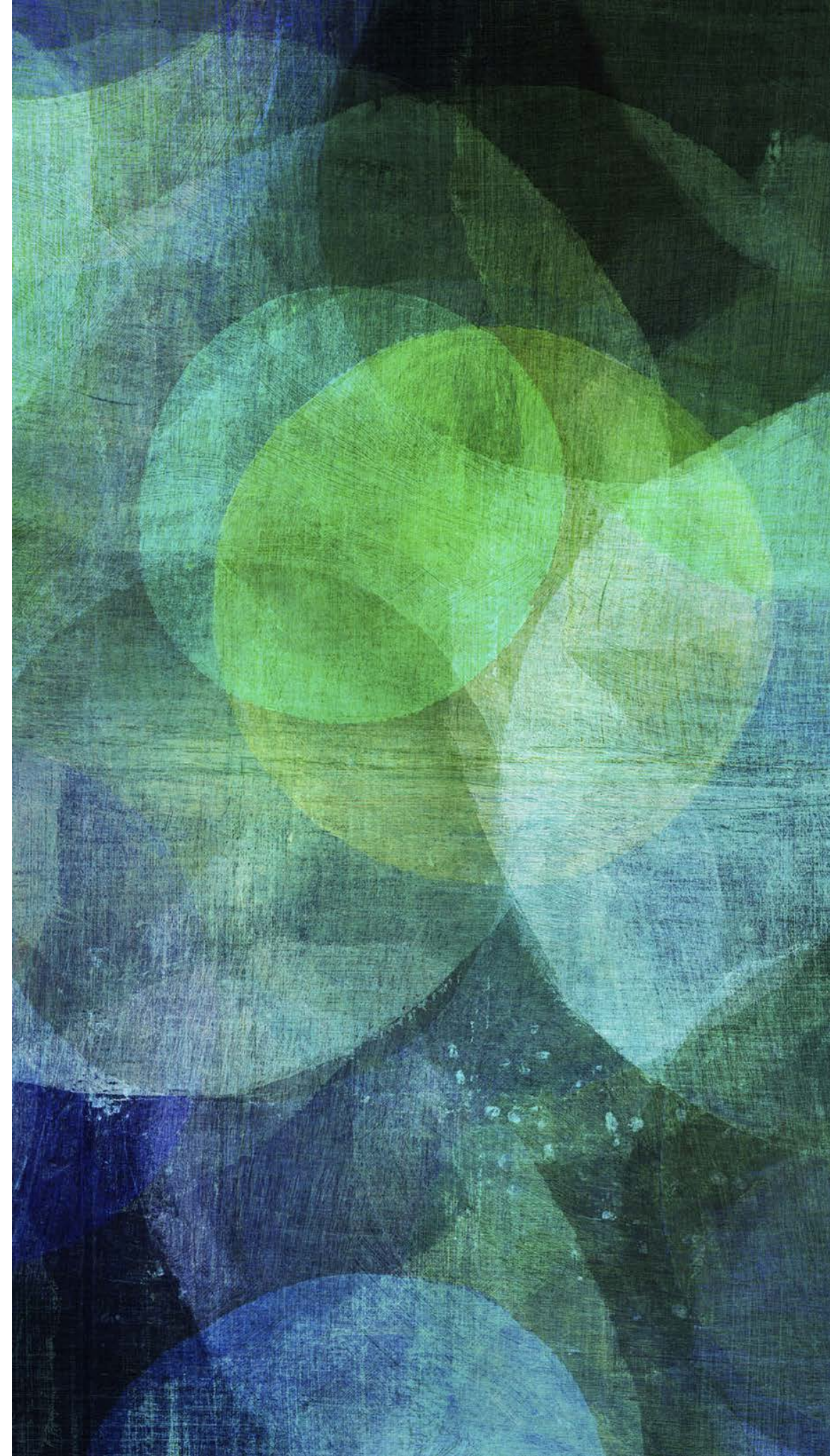
2 3 5

3 5 8

5 8 13

FIBONACCI

.....
1, 1, 2, 3, 5, 8, 13, 21, 34, 55,...



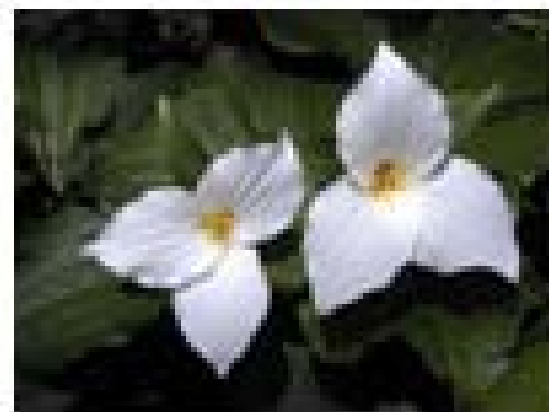
1



2



3



5



8



13



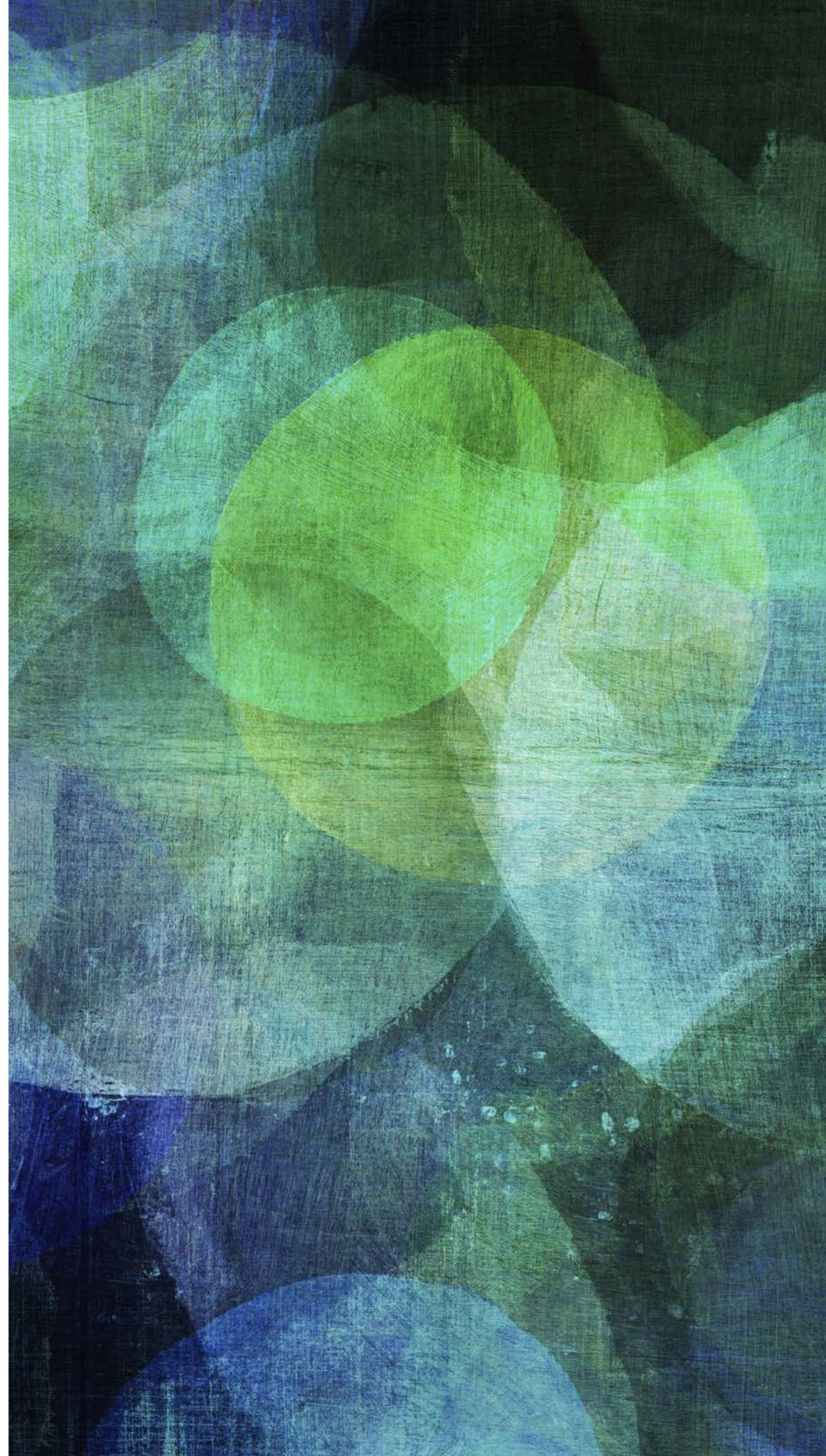
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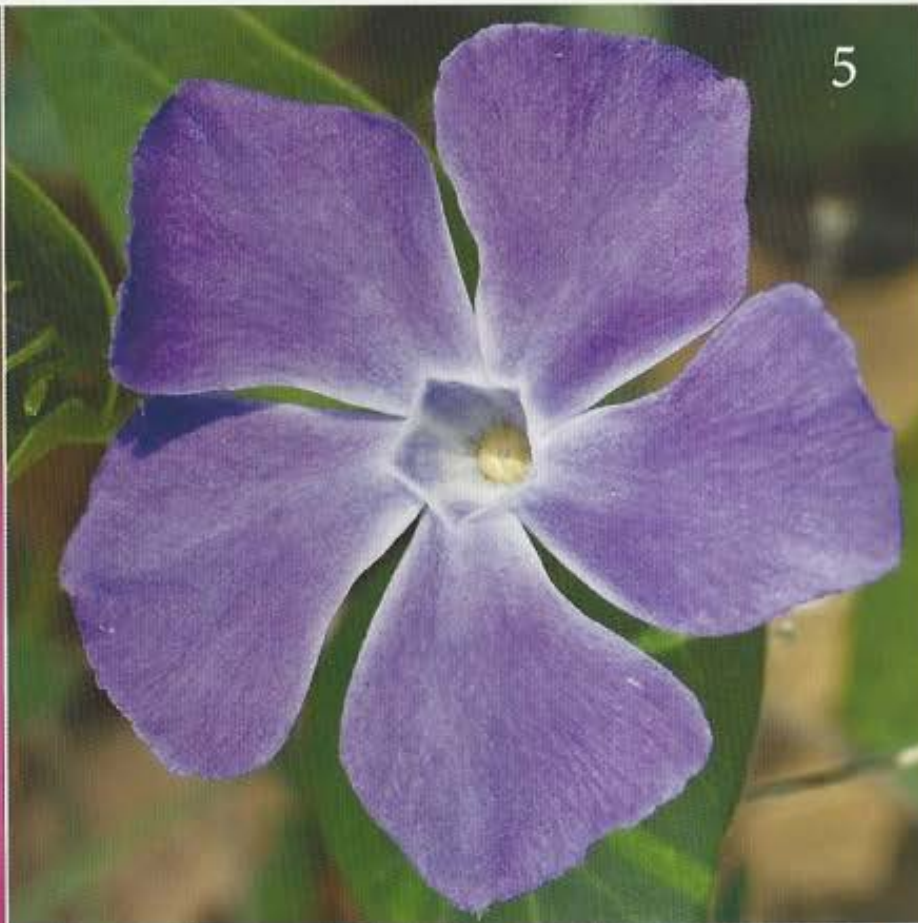


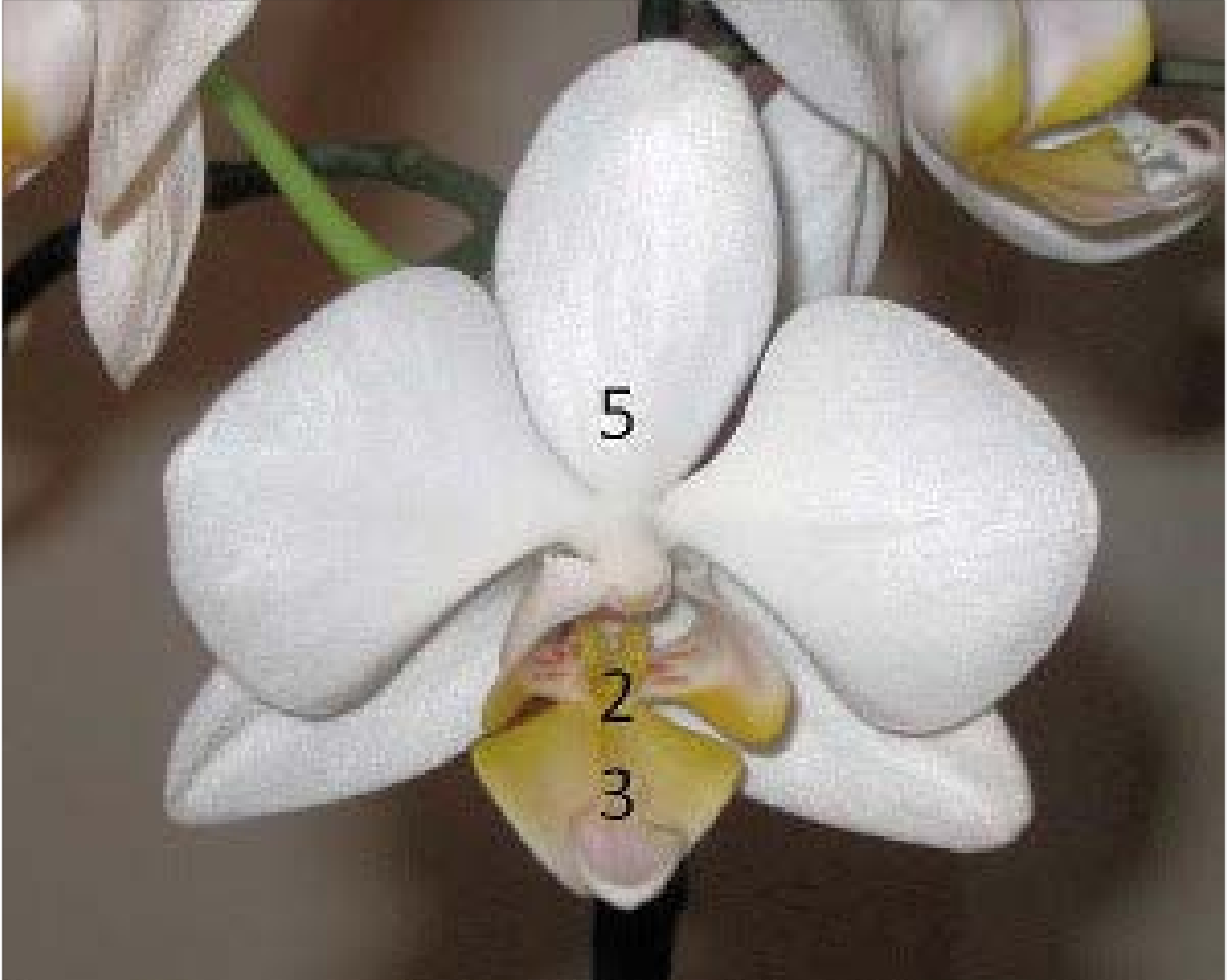
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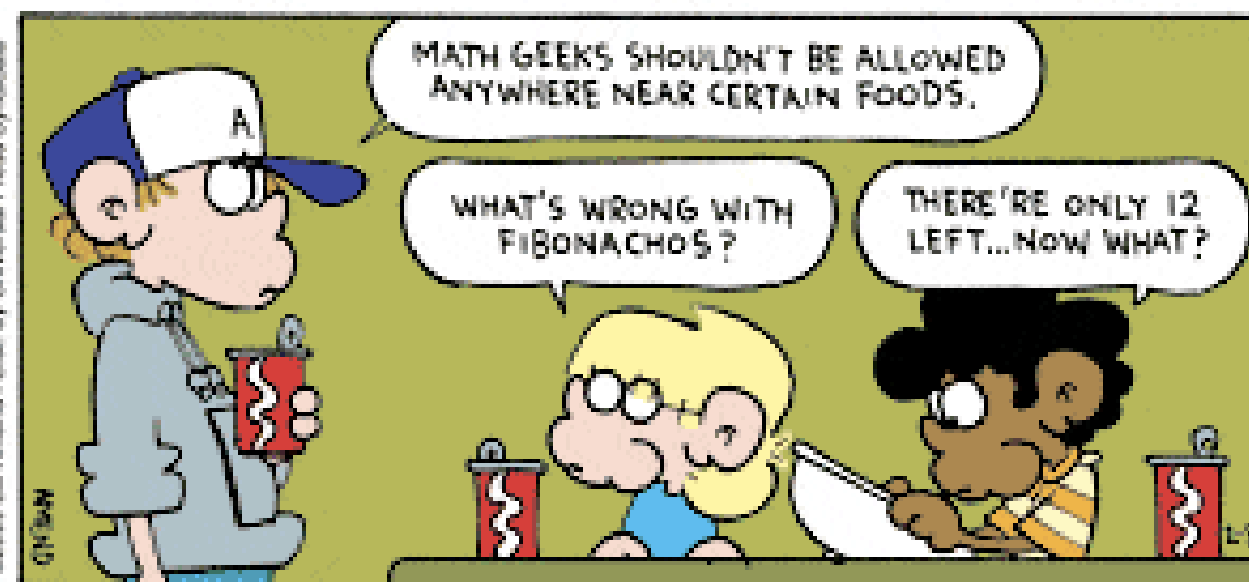


NATURE BY THE NUMBERS

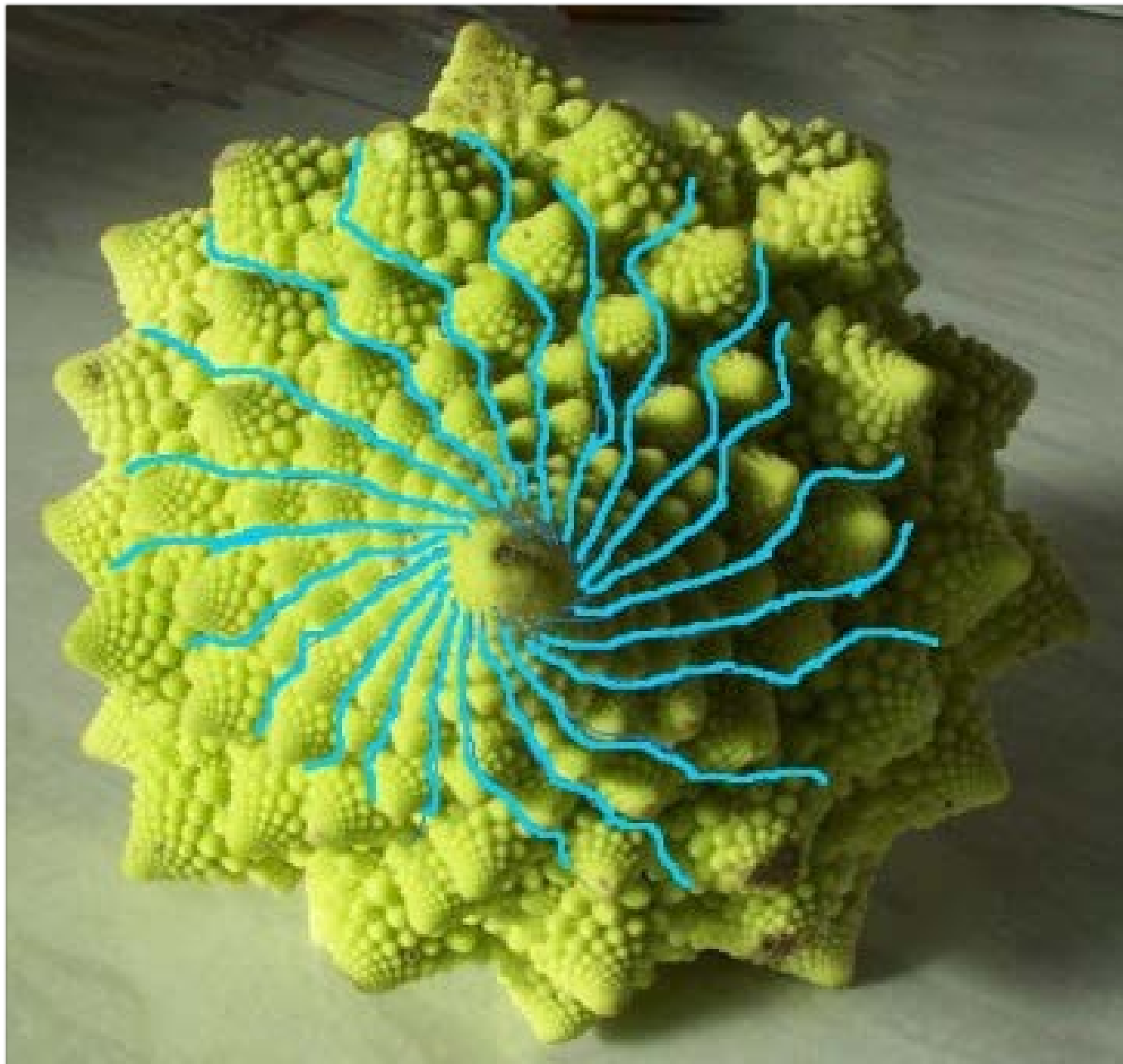




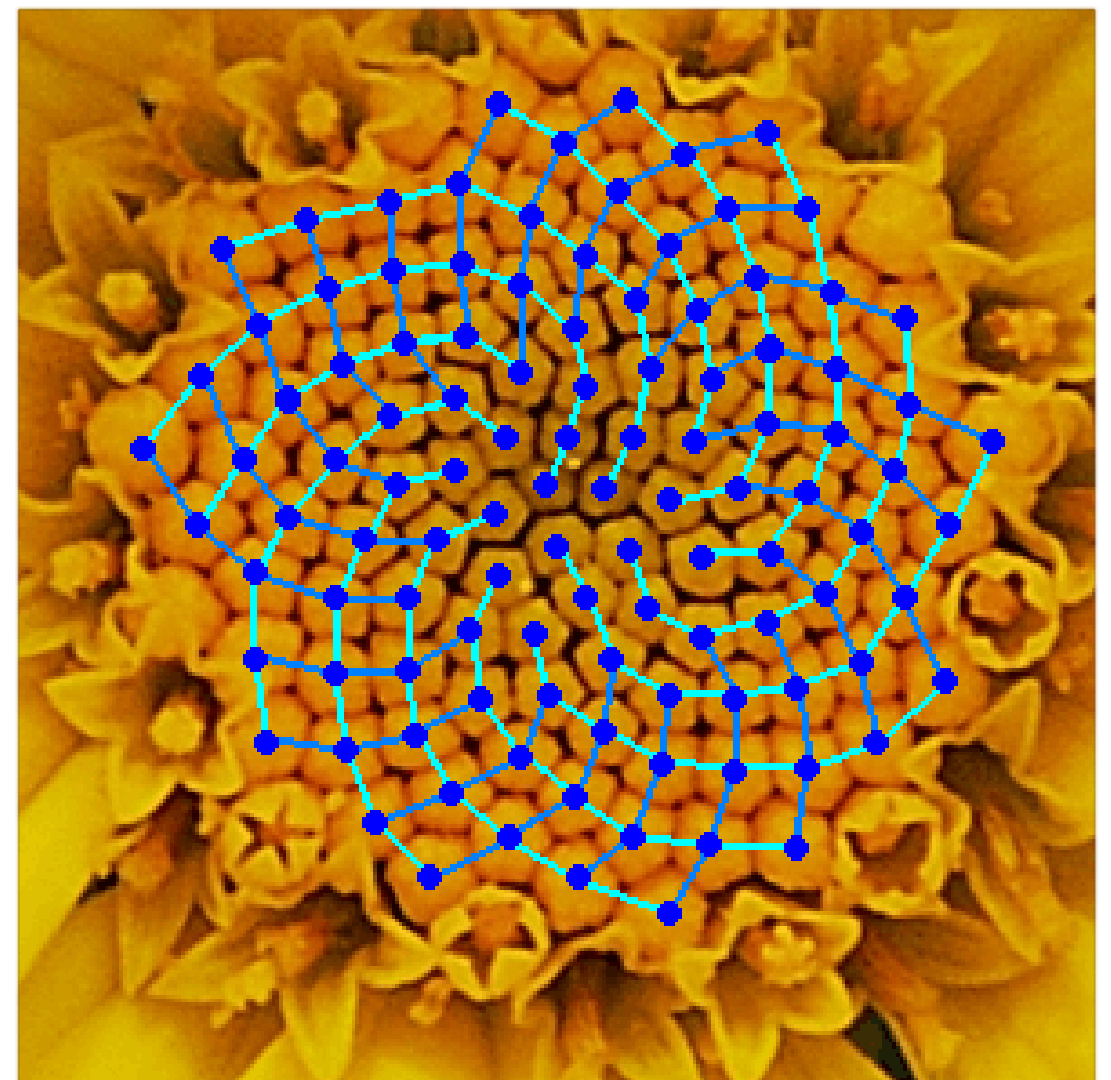


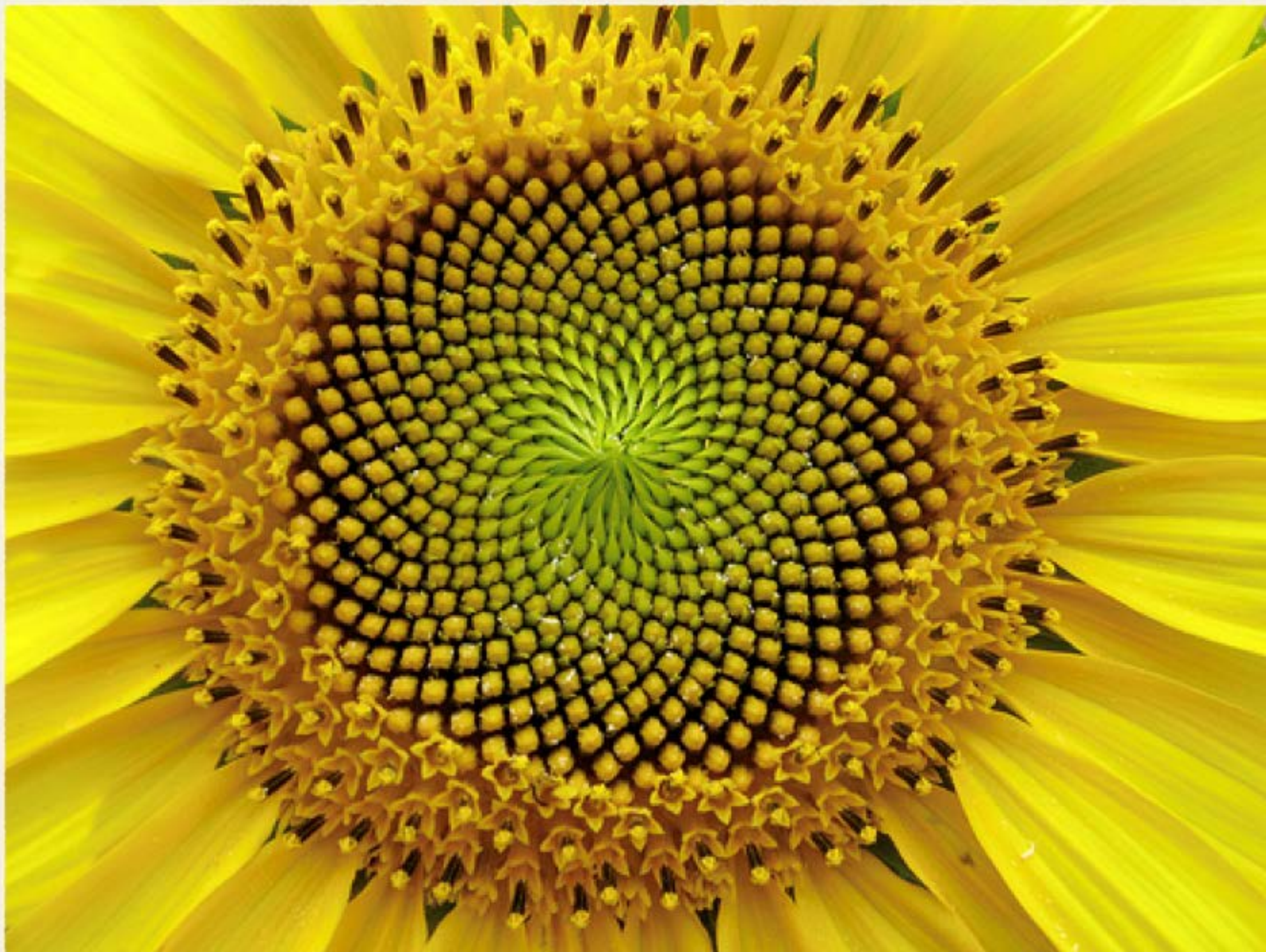






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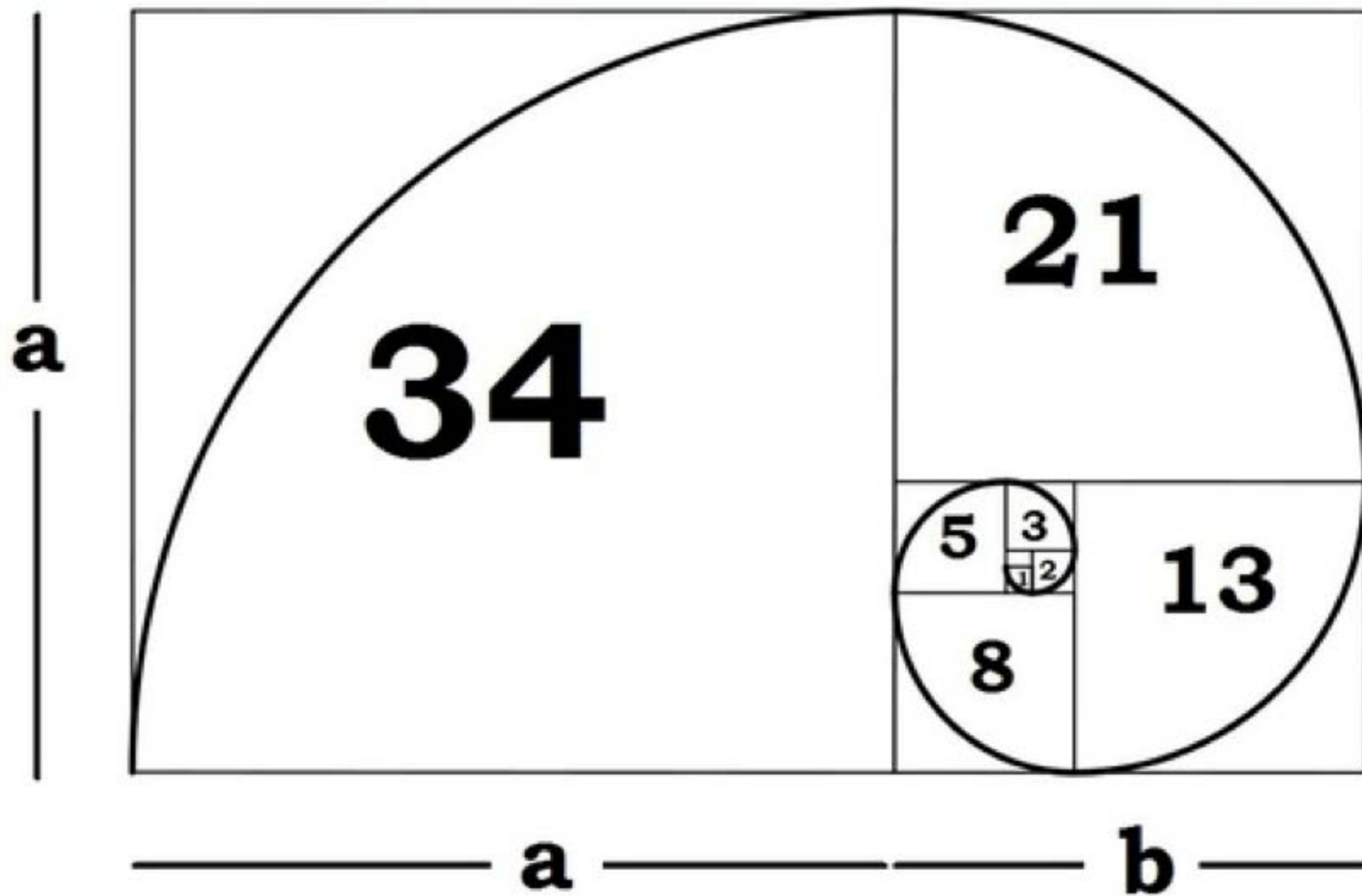




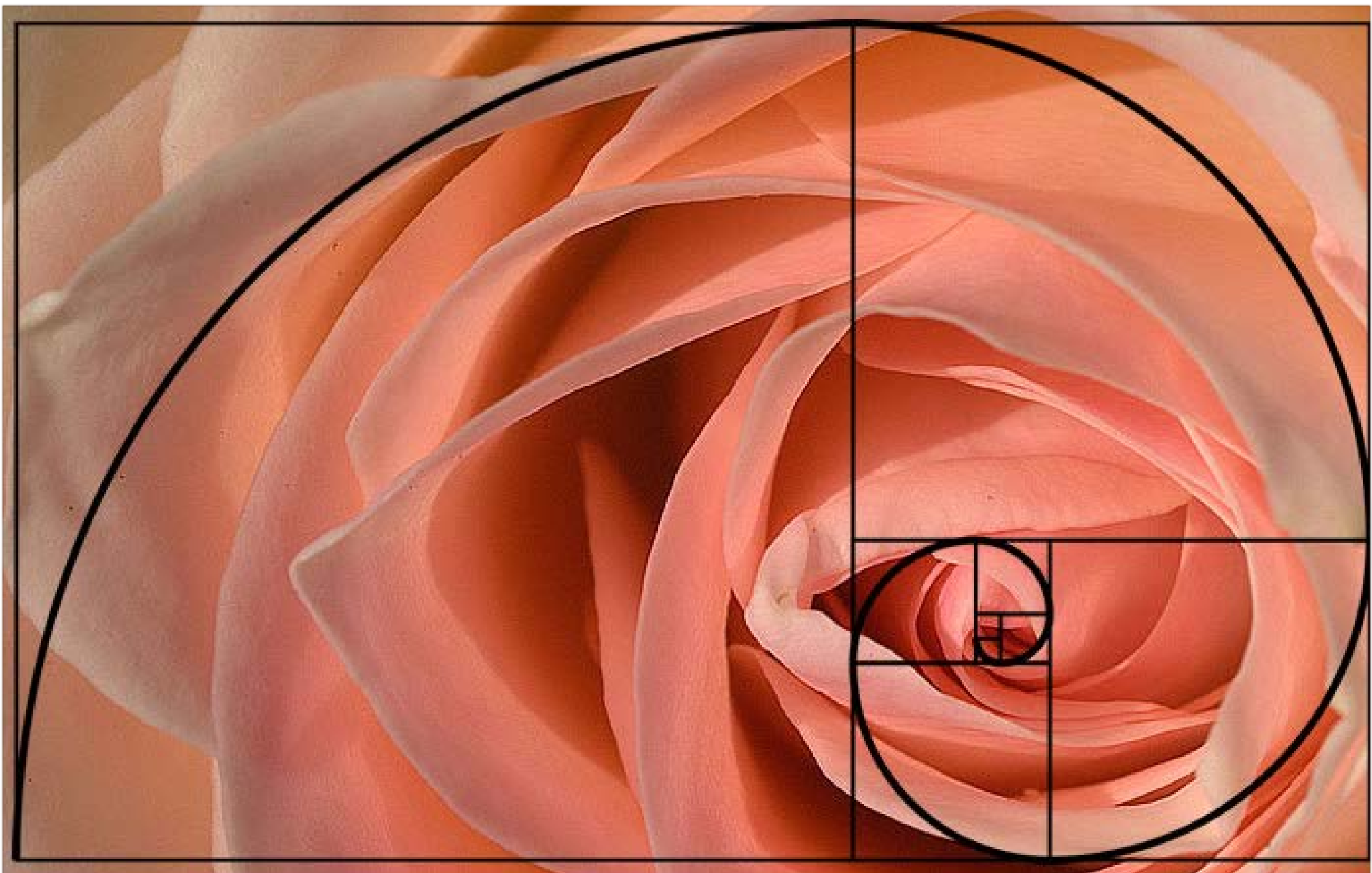


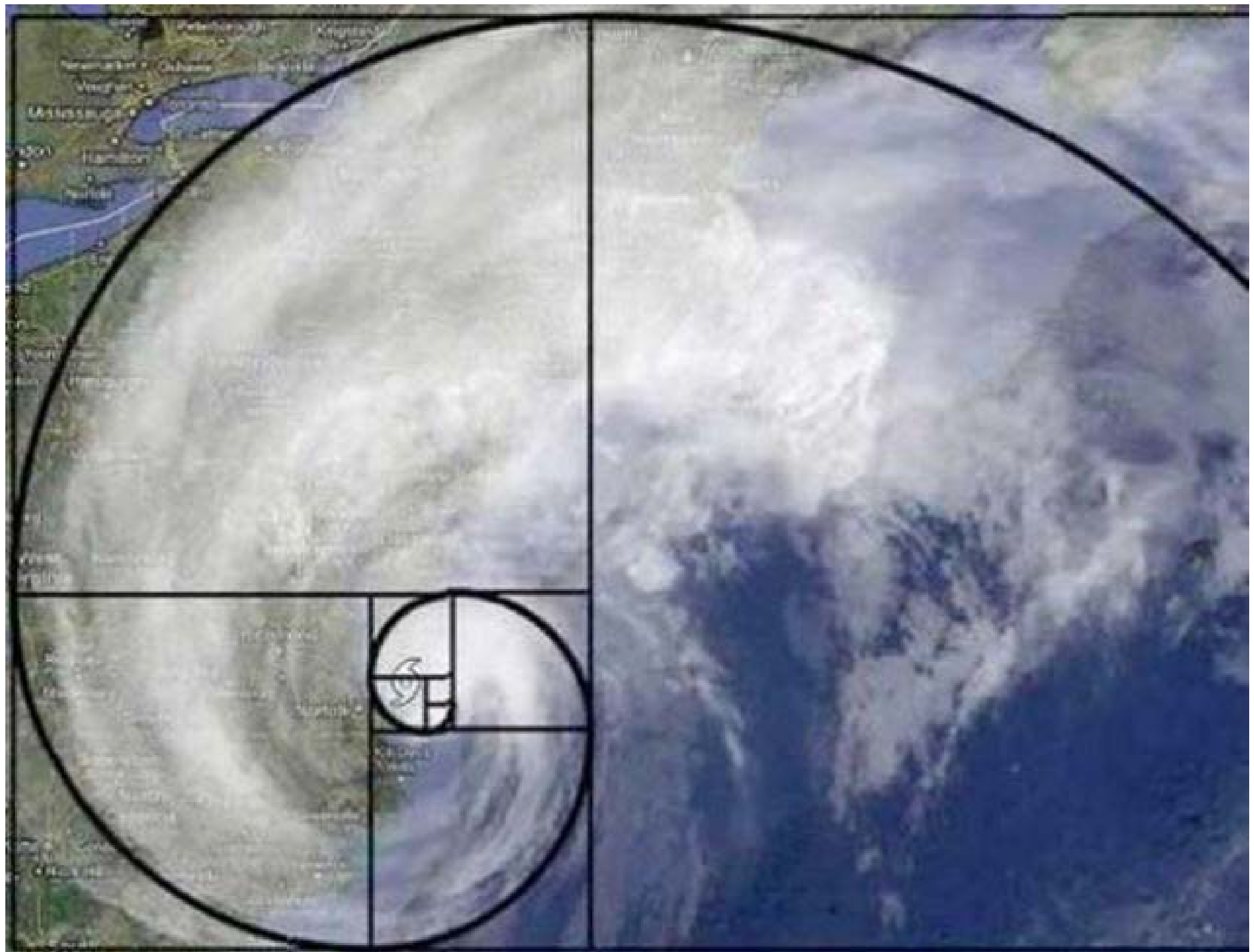
YOUR BEST RECTANGLE...

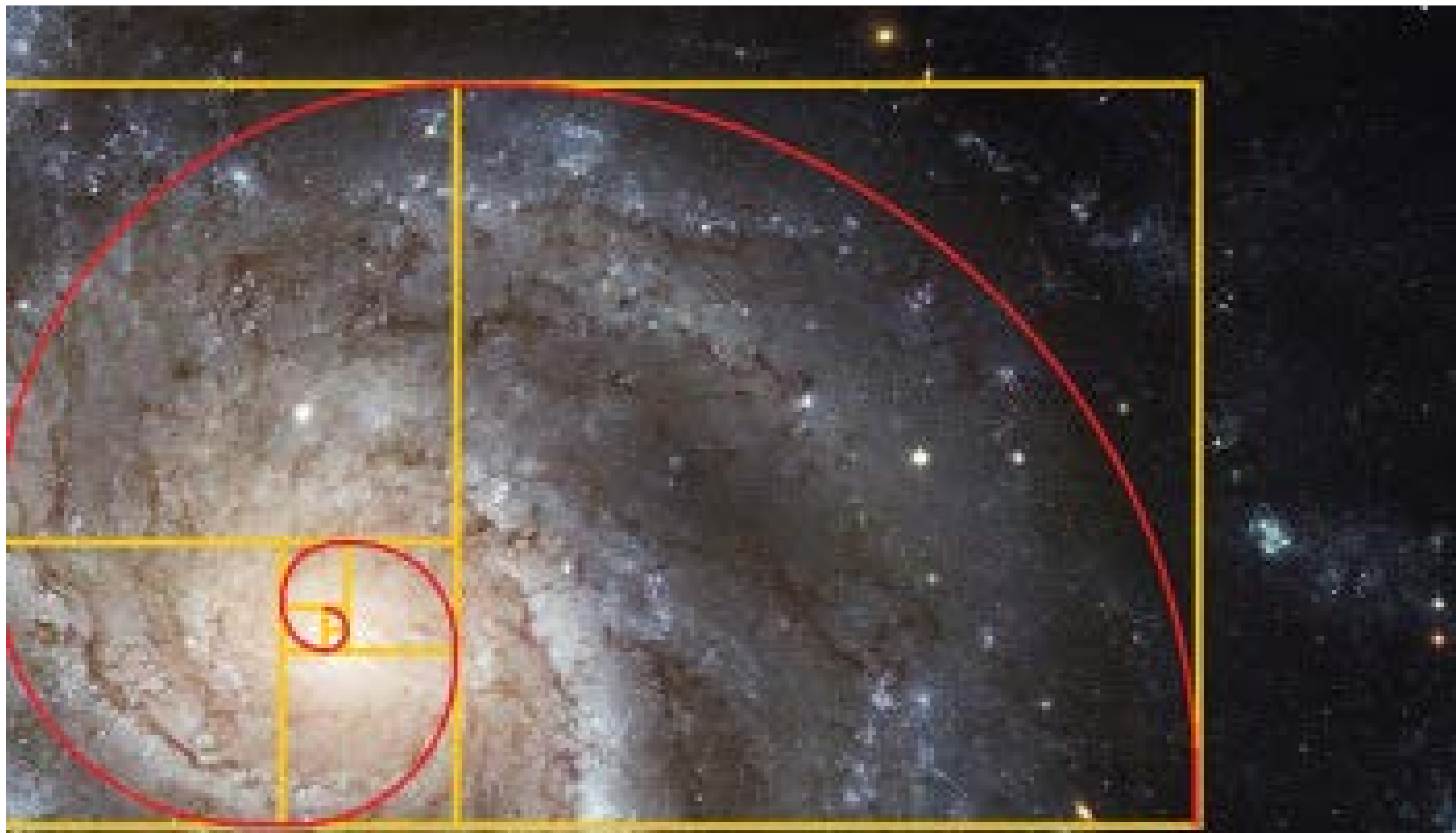
- Draw a rectangle.
- Your best rectangle.

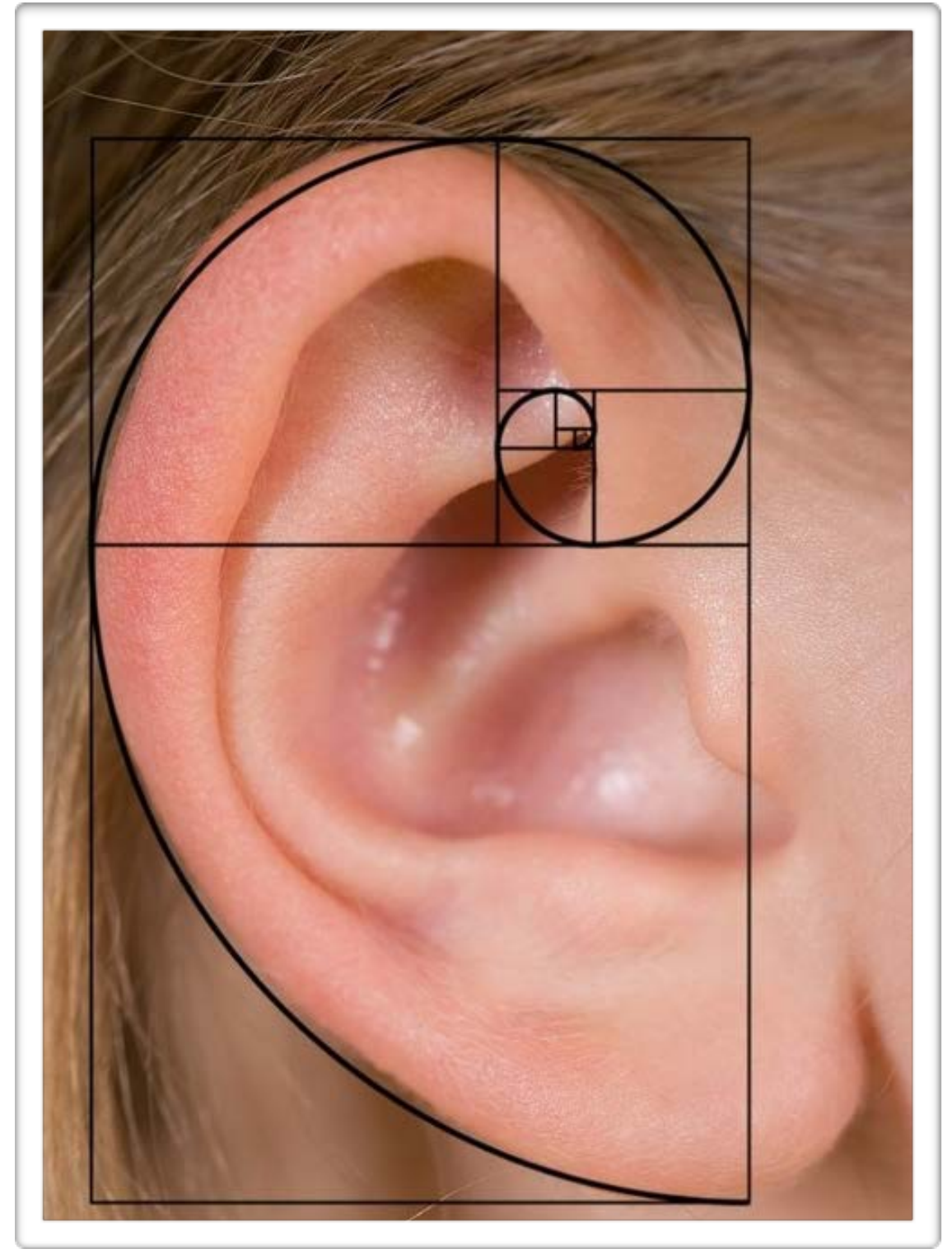
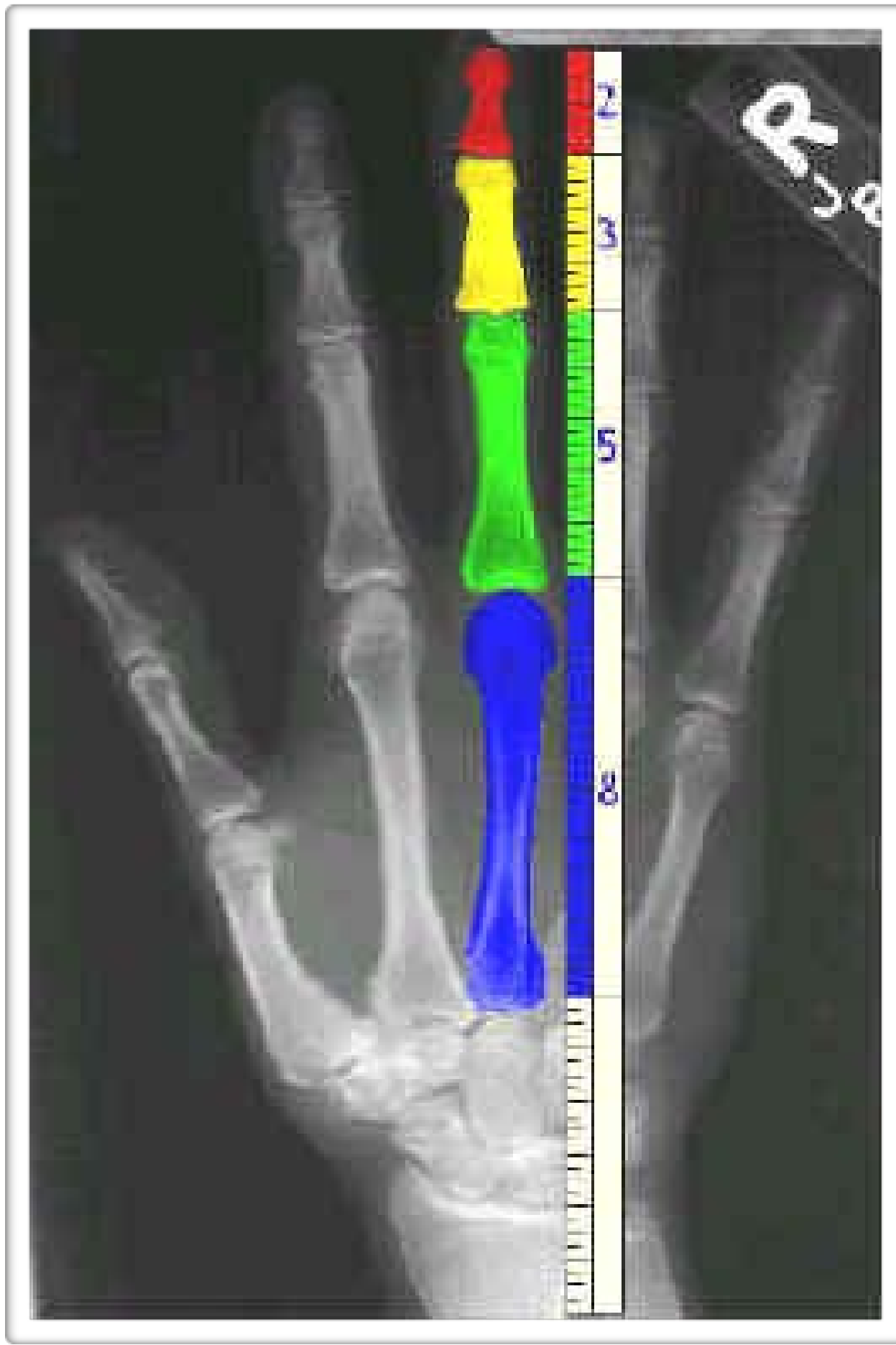








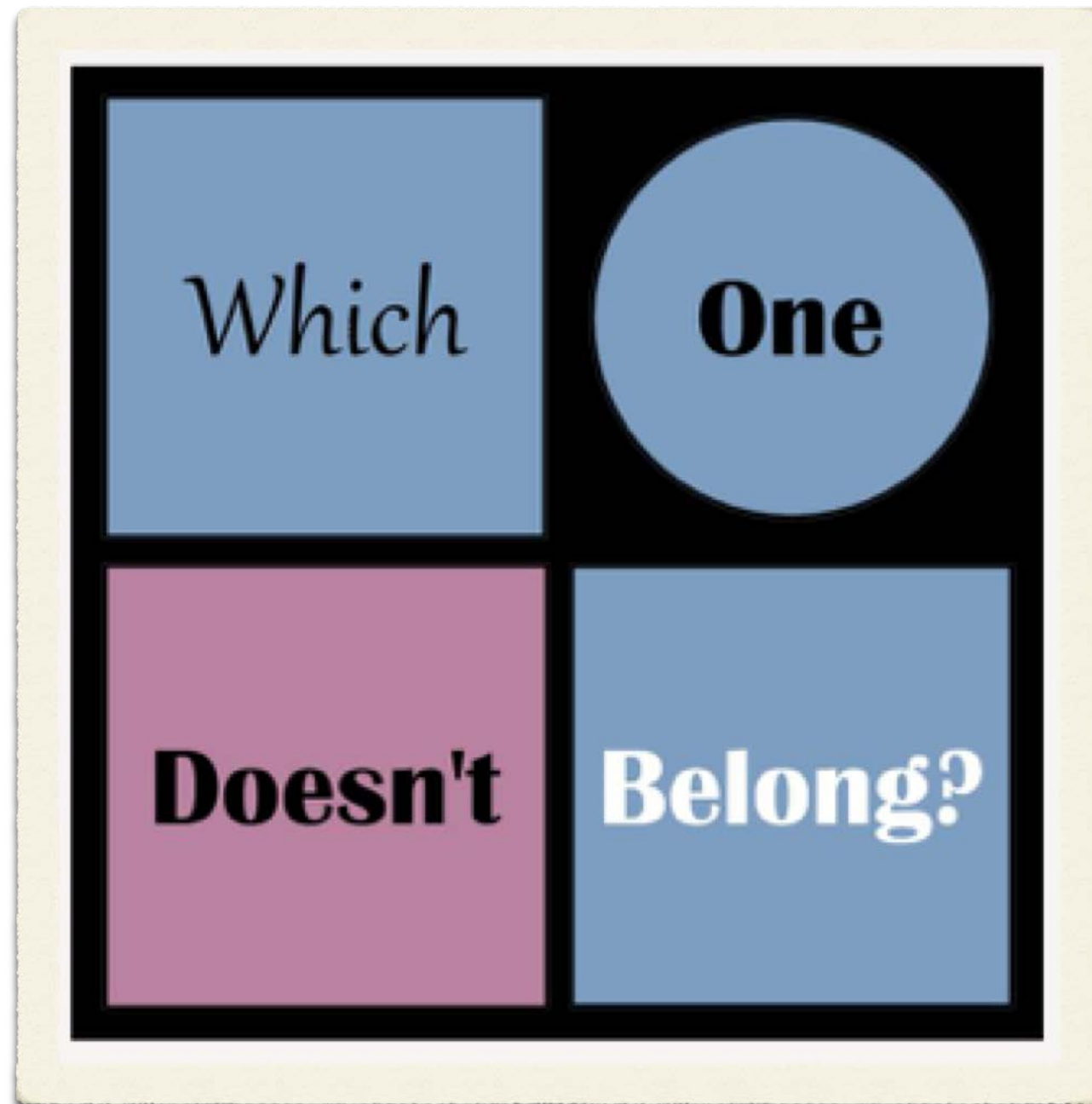


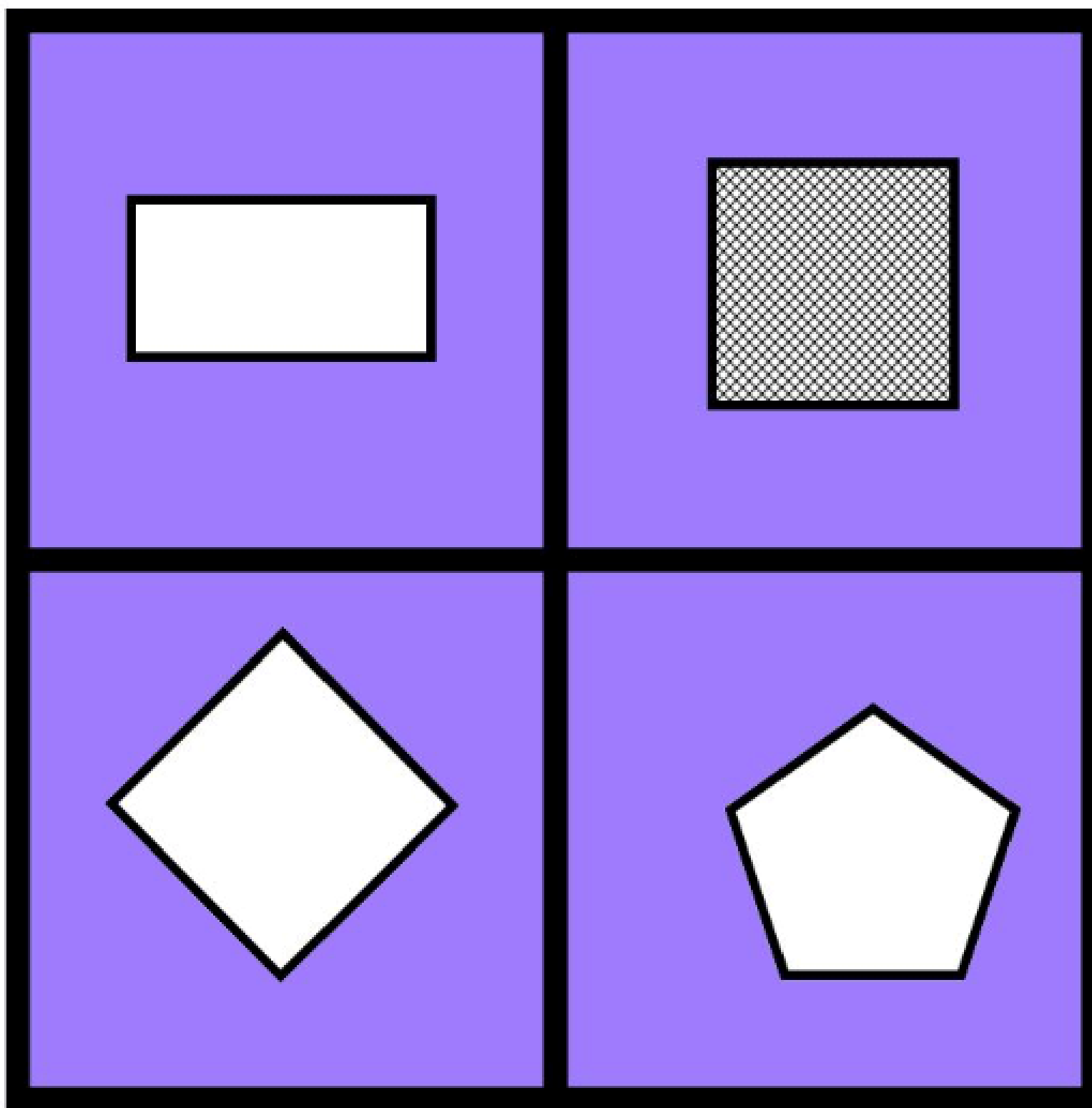




WHICH ONE DOESN'T BELONG?

.....





$8 + 6$

$7 + 7$

$8 + 7$

$5 + 9$

GOOD QUESTIONS

A Year of Open-ended Math Problems
for Grades 2–4

by Carole Fullerton

by Carole Fullerton



SUMS & DIFFERENCES

Teaching Addition and Subtraction
in Grades 1&2

by Carole Fullerton

by Carole Fullerton

Teaching Addition and Subtraction
in Grades 1&2

DIFFERENCES



SUMS & DIFFERENCES

Teaching Addition and Subtraction
in Grades 2&3

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Teaching Addition and Subtraction
in Grades 2&3

DIFFERENCES



PLACE VALUE IN PRIMARY

**Developing Number Sense
in Kindergarten through Grade 2**

by Carole Fullerton



PLACE VALUE IN INTERMEDIATE

**Building Number Sense
Grades 3 to 5**

by Carole Fullerton

by Carole Fullerton

in kindergarten through grade 2
developing number sense

by Carole Fullerton

grades 3 to 5
building number sense



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