EMAT

• mathematics for life •

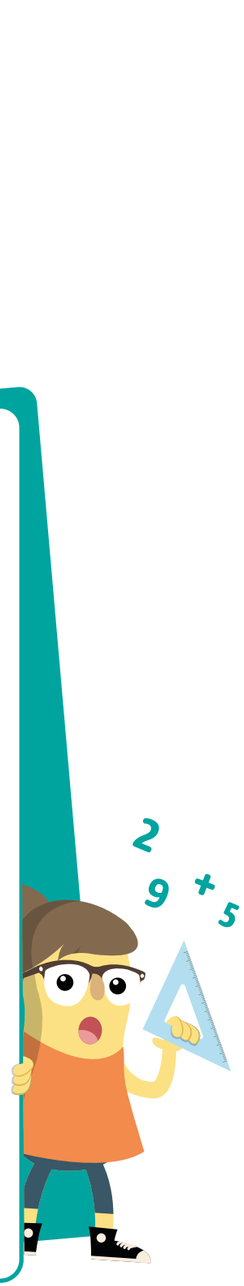
Teacher's Guide - Level 1 sample

¿What is EMAT?

EMAT is a **mathematics teaching program based on innovative methodologies** that allow for meaningful learning. Thanks to games, manipulation and context-specific activities, **your students will enjoy mathematics.**

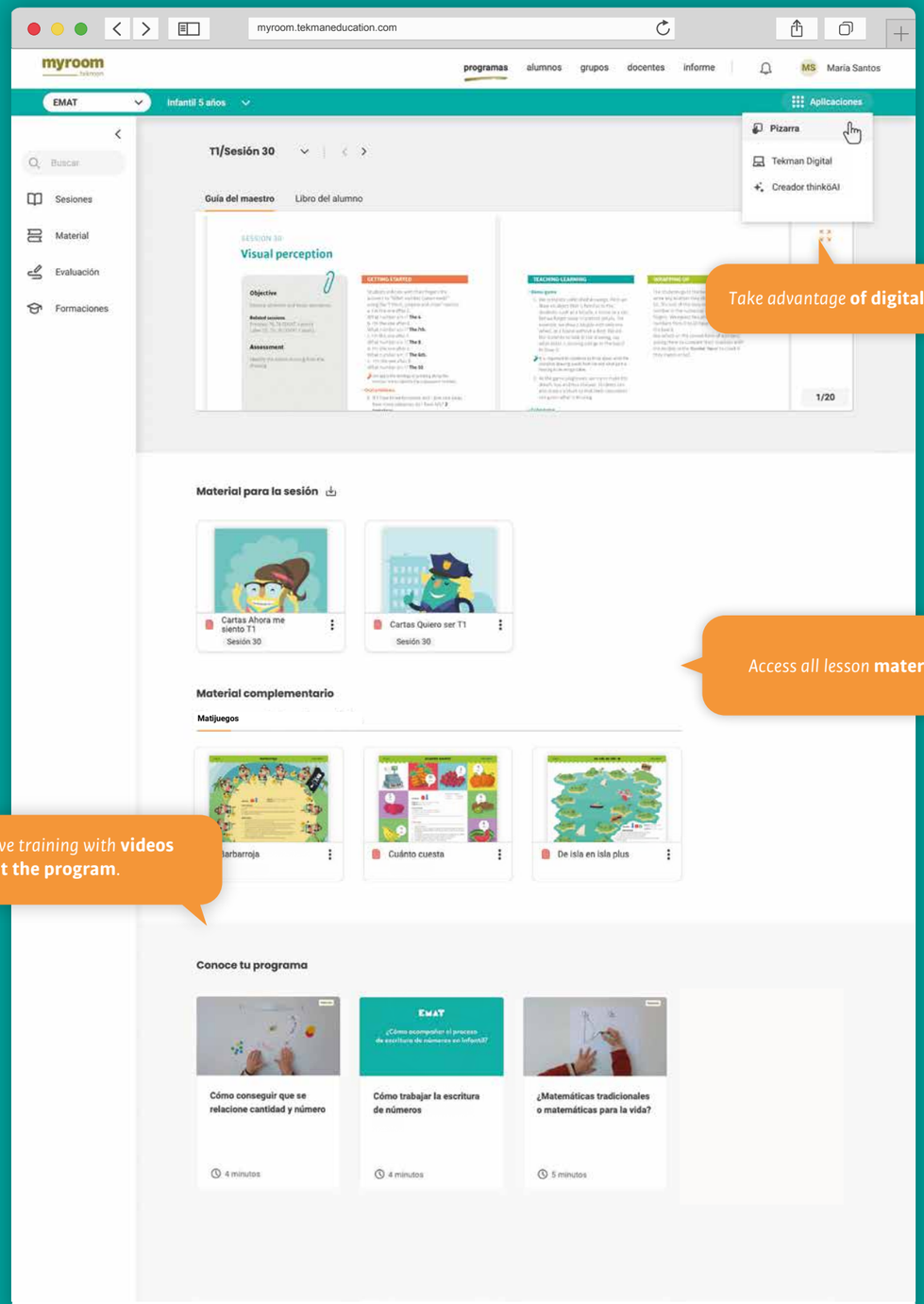
Moreover, **cyclic sequencing of the content** and the wide range of learning experiences will make it possible to achieve in-depth, long-lasting learning from an early age **while respecting all paces of learning.**

Here you will find a **selection of pages from the Teacher's Guide**, the document containing all the activities in detail, as well as the key educational aspects to plan your daily classes.



Your classroom manager day by day

myroom, your online teaching platform, provides you will everything you need to implement the program in your classroom. All the information is **organized**, **with all the necessary resources for the day**, so that you can carry out the activities in just one click!



Plan your calendar

EMAT proposes **120 lessons** over the course of 3 quarters. These lessons include the initial and final assessments, where we recommend dedicating 2 lessons to each one, and 3 learning situations, where you can dedicate between 2 and 4 lessons, depending on the time you have. Lastly, the shaded lessons are the lessons that contain an activity in the Student's Book.

1st QUARTER

Initial assessment									
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	LS 1			

2nd QUARTER

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	LS 2	

3rd QUARTER

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	101	102	103	104
105	106	107	108	109	110	LS 3	Final assessment		

Lessons with the Student's Book

Understand horizontal cyclicity

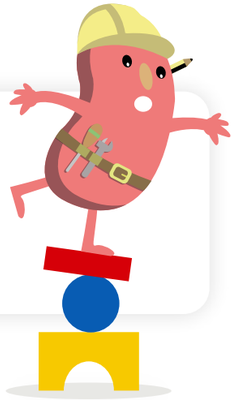
In order for students to be able to use mathematics in their daily life, proposals must be designed to allow them to **build knowledge and practice math skills** in realistic contexts. The best way to **sequence this learning is by doing so cyclically**, in other words, by interspersing information throughout the weeks and quarters to link them together. We indicate the following key aspects that are worked on in EMAT, as well as the lessons they appear in, so that you have an overall view.

Kim: Numbering

1 7 11 16 19 25 27 30 32
37 40 43 47 49 52 55 58 61
64 67 70 72 74 78 82 86 89
92 95 98 100 102

Max: Measurement

6 24 29 36
42 48 53 59
71 73 85 88
93 105 110

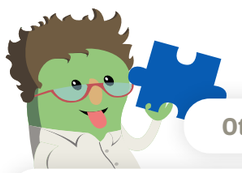


Leo: Geometry

5 10 15 21
23 35 41 51
57 65 69 79
84 97 108

Doc: Visual perception

3 9 14 18
22 33 39 45
62 66 76 81
91 103

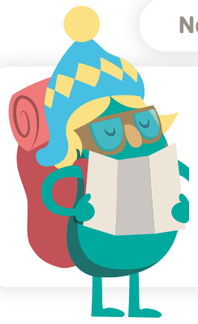


Otto: Logical reasoning

2 8 13 17 26 28
31 38 44 50 54 60
75 80 87 90 94 99

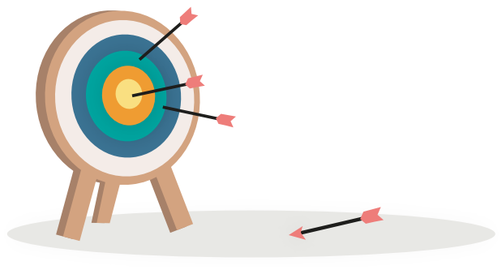
Nora: Spatial orientation

4 12 20 34 46
56 63 68 77 83
96 101 107



Review the objectives

- Develop critical thinking skills by applying the notions of “one more” and “one less” in everyday situations.
- Match the numbers to their corresponding quantities in an accurate and applied manner (from 0 to 7).
- Efficiently coordinate the graphical representation of the numbers (from 0 to 10) by integrating visual and manual skills.
- Use mental arithmetic strategies, including the use of materials such as Cuisenaire Rods and fingers, in counting exercises.
- Build number series in a creative and play-based way, exploring patterns by 1s, 2s and 5s.
- Compose and decompose numbers autonomously using Cuisenaire Rods.
- Solve number problems mentally and graphically, incorporating addition and subtraction operations.
- Recognize patterns in number series based on shape, size and color.
- Make groupings and quantitative matching with elements, demonstrating an understanding of number relationships.
- Discover common attributes in groups of elements, encouraging sorting and logical reasoning.
- Identify the belonging of an element to a grouping and establish relationships based on signs.
- Search for elements within a set, developing observation and visual discrimination skills.
- Build series with elements based on variable signs, promoting cognitive flexibility.
- Integrate knowledge of ordinal and cardinal numbers in a contextual and applied manner.
- Apply notions of orientation, organization and directionality in relation to oneself and objects.
- Connect dots to form geometric shapes and explore visual and spatial connections.
- Follow mazes, developing orientation and problem-solving skills.
- Build geometric shapes on the geoboard, integrating manipulation with mathematical concepts.
- Recognize and describe geometric shapes (circle, square, triangle and oval) in different contexts.
- Use grouping criteria to sort logic blocks according to attributes such as shape, color, measurement and thickness.
- Identify Geometric Shape Bits, encouraging pattern recognition.
- Compare and order objects based on contrasting notions of long, wide, high, full, empty, thin, thick, heavy and light.
- Use the notions “more than”, “less than” and “same as” in contexts of masses and lengths.
- Use mathematical vocabulary in detailed descriptions of shapes, positions and measurements.
- Experiment with probability in practical situations and mathematical games.
- Offer creative solutions and predictions in mathematical problems and transformation of elements.
- Actively participate and show an interest in mathematical games, encouraging play-based learning.
- Collaborate effectively in the distribution and collection of mathematical materials during activities.
- Show an interest in the answers and solutions provided by classmates, promoting collaboration.
- Keep students’ attention, manage impulses and participate enthusiastically in all mathematical activities.



Plan your assessment

Assessment with EMAT is an **overall**, **continuous** and **formative** assessment that is designed to help you gather information that you can then use to describe the development of your students and the achievement of the assessment criteria at that stage. We recommend the following moments of time, strategies and assessment tools.

1

INITIAL ASSESSMENT

- **When?** Before starting the EMAT lessons.
- **How?** Carry out specific activities on mathematical skills for no more than 4 lessons and write down the difficulties and potential that you identify in your students.
- **Tools:** initial assessment activities available in this guide.

2

SYSTEMATIC OBSERVATION

- **When?** In the lessons.
- **How?** Regularly write down the achievement of the lesson’s objective, choosing students based on previous observations.
- **Tools:** assessment indicators of the lesson.

EVIDENCE OF THE PROCESS

- **When?** In the lessons.
- **How?** Regularly document the development of math skills, focusing on the process.
- **Tools:** pages from the Student’s Book and photographs of the learning experiences.

At the end of each quarter, we recommend that you gather all the observations and evidence and analyze them together with the *Competence Rubric*, available in myroom, for the level of achievement of the assessment criteria.

3

FINAL ASSESSMENT

- **When?** At the end of the EMAT lessons.
- **How?** Carry out specific activities on mathematical skills for no more than 4 sessions and assess the level of achievement.
- **Tools:** final assessment activities available in this guide.

SELF-ASSESSMENT

The lessons also contain self-assessment and co-assessment proposals for students that relate to learning processes and cooperative work. They will help students improve their self-regulation and autonomy.

Discover learning situations

Learning situations are tasks and activities that are based on a challenge or a problem and allow students to practice knowledge and skills in an integrated and context-specific manner. It enables students to develop their competences and transfer their learning to real life.

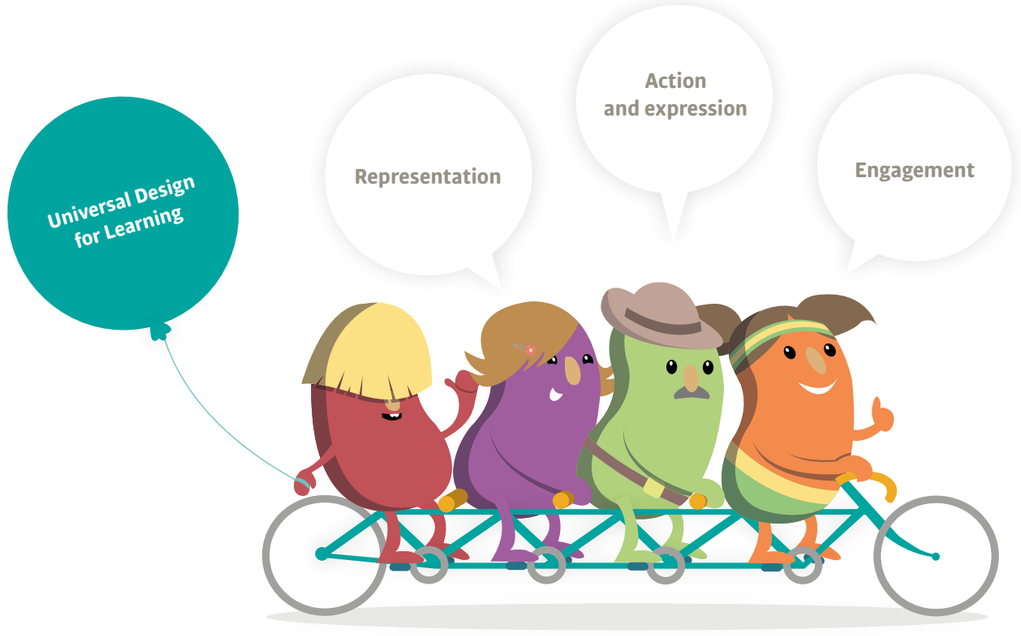
The EMAT lessons provide you with context-specific activities that will allow for developing this competence. Furthermore, we designed 9 learning situations to carry out over the course of several lessons: 3 of these situations are developed in the Teacher's Guide, one at the end of each quarter, and the rest are complementary and explained in the Classroom Programming.

What do the situations contain?

The learning situations are characterized by entailing a complex challenge for students that is adapted to their developmental age, presenting an authentic context and using active methodologies. For example:

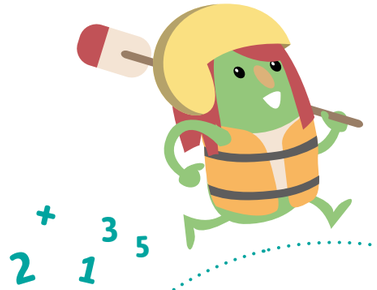
- **Challenges:** they can be formulated as a question to be answered, a product to be made or an action to be carried out.
- **Contexts**: methods such as manipulation, cooperative learning, the culture of thinking, reflection, and self-regulation of one's own learning or emotional education are integrated.
- **Methodologies:** methods such as manipulation, cooperative learning, the culture of thinking, reflection, and self-regulation of one's own learning or emotional education are integrated.

Moreover, the learning situations are designed to respond to diversity in the classroom and break down the barriers of learning and participation. To achieve this, we use the **Universal Design for Learning**, a teaching framework in which students find multiple ways:



How are the situations developed?

The learning situations consist of one or more activities and should allow for a resolution process that includes complex reasoning and resolution skills. That is why it is necessary to start with an initial challenge and sequence the tasks, based on the moment of resolving the same, with processes such as the following:



1. Activate knowledge and analyze the context.
2. Understand and practice knowledge, explore and practice.
3. Integrate knowledge and skills, apply and reflect.

Specifically in EMAT, the learning situations allow students to use different forms of mathematical reasoning, representation and communication in meaningful and functional contexts.

Create a mural with the learning situation in your classroom!

Learning situations should promote the comprehensive development of competences in all areas. Creating a learning mural in your classroom is a good strategy to facilitate this aspect and it will also be an excellent opportunity to gather evidence of learning... and motivate your students!

LESSON 1

Visual perception

Objective

Sort objects according to criteria.

Assessment

Match objects of the same color.

Related lessons
Subsequent: 62, 76 (EMAT Level 1)

Materials

Classroom Box
- *Logic blocks*
- *Attribute Dice*

Other
- Colored hoops: red, blue and yellow

WARM-UP

We work on counting and displaying numbers by showing and hiding from 0 to 5 fingers and vice versa. Students need time to learn to count out loud in both directions. We will start, continue and finish all together.
We will gradually stop counting with the students so that they can finally do it alone.

We show students how to place their fingers to represent the quantities from 0 to 5 and from 5 to 0.

- **Problem of the day**

Groups students based on a common characteristic, such as the color of their clothes, the type of shoes they are wearing or the color of their eyes, and place them in front of the blackboard.
Together, we talk about why they form a group and what criteria we used to group them.
We can ask questions such as:
“In this group, what do you all have in common?”; ”Why do you think you belong to this group?”; “Why or why not?”; “What special or similar characteristics do you have in this group?” to encourage students to reflect.

Classroom management

In the first week of the course, show students the EMAT materials (**Student’s Book**, **Student Materialss**, **Classroom Box**, etc.) and encourage them to use them. Highlight the importance of properly taking care of them and show the specific place where they will be stored after use.

TEACHING-LEARNING

- **DemoGame 1**

1. We put three colored hoops in the center: one red, one blue and one yellow, and we provide a variety of different colored objects.
2. We roll the attribute dice (color) and, depending on the result (red, blue or yellow), students have to look for an object of the same color and place it inside the hoop of the same color that is in the center.

- **DemoGame 2**

1. We let the students play freely with the logic blocks and then we group blocks based on their shape, color or size.
2. When we give a signal, students will have to group the blocks based on different characteristics. To do this, we encourage them to be attentive and to sort the blocks in the following ways:

Group by shape: all the circles together, all the squares together, and so on.
Group by color: the red blocks in one group, the yellow ones in another, and so on with the other colors.
Group by size: the large blocks in one set and the small ones in another

.

WRAP-UP

We can use the Ematis Puppets to introduce the EMAT characters.

LESSON 2

Logical reasoning

Objective

Make simple groupings of two elements.

Assessment

Group elements in pairs based on their characteristics.

Related lessons
Subsequent: 13, 17, 26 (EMAT Level 1)

Materials

Classroom Box
- *Logic blocks*
- *Animalarium* Cards

Other
- Different objects in identical pairs

WARM-UP

We organize a treasure hunt where students look for objects that can be sorted by identical pairs. For example: building blocks, small toys or even socks. You can also carry out this activity in nature and encourage students to find identical objects, such as leaves, stones or sticks.
We give students some time and motivate them to look for, identify and collect as many pairs of identical objects as they can.
As they find pairs, we encourage them to say out loud what those objects have in common (same color, shape, size, etc.).
Once several pairs have been collected, we gather the students, discuss the objects they found and group the objects together by their similarities, such as color, shape or size.

• Problem of the day

What does each set of elements have in common?

a. Dog, cat. **Animals.**
b. Red, yellow. **Colors.**
c. Fingers, legs. **Parts of the body.**
d. Book, story. **Things to read.**
e. Square, circle. **Geometric shapes.**

Classroom management

Encourage students who still do not talk a lot to participate by modeling participation, using gestures and providing visual clues such as pictures or cards so that they can express themselves. Create an atmosphere of trust by celebrating any attempt at participation and remind the rest of the class of the importance of knowing how to listen.

TEACHING-LEARNING

• DemoGame 1

1. Students play freely with logic blocks to learn their shapes.
2. Next, we prepare two sets of identical logic blocks: one on the floor that can be seen and one in an opaque bag that cannot be seen.
3. A student takes a shape out of the bag and shows it to their classmates.
4. The classmates look for the same shape that has been shown, but among the group of blocks that is on the floor.
5. Another classmate takes out a new shape and all the students look for its partner among the visible blocks.
6. We repeat this game with different students who take out shapes until all the pairs have been found.
7. Then we review the characteristics of each block: its color, size, thickness and shape.

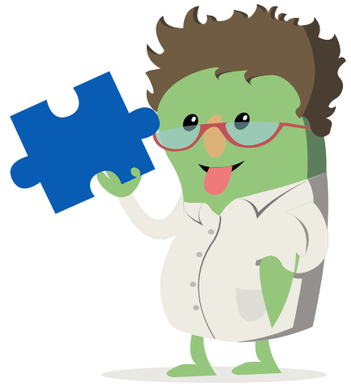
We recall the importance of using mathematical vocabulary in activities that involve comparing shapes: names of geometric shapes (circle, square, triangle, rectangle), color names (red, blue, yellow), words to describe size (large, small) and terms for thickness (thick, thin).

• DemoGame 2

1. We play memory with *Animalarium*. We show the cards and explain that the game consists of finding matching pairs of animals.
2. We mix the cards and place them face down forming a grid.
3. We ask a student to start the game by turning over two cards. If the cards are the same, the student says the animal out loud and keeps the cards.
4. If they are not the same, the cards must be returned to their original place, face down, and the next student tries to find a pair.
5. We continue taking turns until we find all the pairs of animals. We encourage students to pay attention and remember the location of the cards to find the pairs more easily.

WRAP-UP

During the treasure hunt: “What objects did you find more easily?”; “Was there any object that was more difficult to find?; “Why was it difficult?”; “What strategies did you use to find the pairs of objects?”; “What did you learn about the objects by looking for the identical pairs?”.



LESSON 3

Numbering

Objective

Identify the graphic representation of number 1.

Assessment

Visually identify the number 1 in the classroom.

Related lessons
Subsequent: 7, 11, 16 (EMAT Level 1)

Materials

Student Materials
- *Tracing Numbers*

Classroom Box
- Number Cards

Other
- Chalk, tape, markers
- String
- Sand tray and sticks
- Play dough

WARM-UP

We work on counting and displaying numbers by showing and hiding from 0 to 5 fingers and vice versa. Students need time to learn to count out loud in both directions. We will start, continue and finish all together. We will gradually stop counting with them so that they can finally do it alone.

We show students how to place their fingers to represent the quantities from 0 to 5 and from 5 to 0.

• Story problems

1. I have two cars and you give me another one. How many cars do I have now? **3 cars.**
2. I have three balls and I give one to María. How many balls do I have left? **2 balls.**
3. I have three dolls but two broke. How many dolls do I have left? **1 doll.**

Classroom management

When you present the story problems, ask students to give their answer by raising the number of fingers that they believe corresponds to the answer or by saying it out loud. Do not forget to encourage them and praise their efforts, regardless of whether the answer is correct or not. We immediately correct the problem together and show the answer before moving on to the next question. It is important to maintain a pace that gives them time to think, but that also keeps focus on the game.

TEACHING-LEARNING

• DemoGame

1. We prepare a series of simple clues that lead to the number one hidden somewhere in the classroom. As the students solve the clues, they will get closer to the number one.
2. Once they have found the number one, we show it and demonstrate how to slowly trace it step by step, beginning at the starting point: "We start with an angled stroke and then a straight stroke".
3. We ask students to take turns following the trace of the number one that we have marked on the floor with chalk or tape.
4. We also ask them to try drawing the number one in the air with their finger to practice the movement.

It is essential to keep in mind that when practicing number strokes in the air, it is advisable to do so as a mirror image in order to help students repeat it correctly.

• Manipulative activity

Large-scale activities:
1. Students trace a large number 1 on the blackboard with chalk or markers.
2. Students work with string to model the number 1 on the floor and trace its shape with their finger or walk around the number.

Activities to do on paper:
3. Students trace the number 1 by following the guides with markers in *Tracing Numbers*.
4. Students try to trace the number 1 on a sand tray using their finger or a stick.
5. Students use play dough to model and form the number 1.
6. Students trace the number 1, practicing several times in *Tracing Numbers*.

Provide different materials and formats, start with larger, manipulative activities, and as the students progress, introduce more detailed activities on paper. Remember that it is essential to consider their motor skills and indicate the starting point and the pattern of movements necessary to trace the numbers properly.

WRAP-UP

We encourage students to think together bout what we have been doing today: counting! and we ask, "Why are we doing this?". We expect answers such as: **Because it's fun**; **I know how to count**; or we may also hear **One, two, three...!**.
We accept all answers: "But do you know what is the most incredible thing about counting? It lets us know 'how many there are' of something.

Magic Blackboard

Students can practice tracing numbers on the **Magic Blackboard** with *Tracing Numbers*.

LESSON 4

Spatial orientation

Objective

Know the spatial concepts of “open” and “closed”.

Assessment

Identify the notions of “inside” and “outside” in game situations.

Related lessons
Subsequent: 12, 46, 56 (EMAT Level 1)

Materials

Classroom Box
- *Logic blocks*

Other
- Opaque empty jar, marbles
- Tape
- Sand, tray
- Small objects
- Scarf

Classroom management

The structure of the lesson is key, as is the importance of being flexible and adapting to the needs and interests of the students during the activities. One-on-one attention, providing multiple practical opportunities and offering positive feedback are key elements for the lessons to be successful and effective.

WARM-UP

We discuss the concepts of “inside” and “outside”. We guide the discussion by asking the students: “What things can you find inside the classroom?”; “And outside?”; “What things can you find or put inside a car?”. **Seats, suitcase, coat, dog...**
“And outside?”. **Lights, bicycle, trailer...**

- **Problem of the day**

We put a specific quantity of marbles inside an opaque empty jar and ask students to listen to the sound of the marbles falling inside. Based on that sound, students have to show with their fingers how many marbles they think are in the jar.
After the students have made their estimate, we reveal the actual quantity of marbles by taking them out of the jar and counting them together to verify.
We repeat this with other quantities, without using more than five marbles.

We apply the strategy of counting by subitization, which is used to recognize and determine quantities quickly and without counting each element one at a time.

TEACHING-LEARNING

- **DemoGame 1**

1. We make a large square on the floor with tape. We start with simple commands so that students can familiarize themselves with being inside and outside the square. For example: “Boys inside, girls outside”; “Boys outside, girls inside”.
2. As the game progresses, we increase the difficulty of the commands to challenge their responsiveness. For example: “If you are a boy, crawl outside of the square”; “If you are a girl, jump with your feet together inside of the square”; “Jump inside the square if you are wearing something blue”; “Jump outside the square if you have brown hair”.

- **DemoGame 2**

1. We organize the students into groups and provide them with a tray containing sand or other material and we hide small toys or items inside. We let the students explore the tray looking for the objects and talk about where they are; inside or outside the box.
2. We tell the students which logic blocks they should place inside and outside the tray, following our instructions. For example: “Inside, the blue blocks; outside, the yellow ones.” In turns, students choose two logic blocks or objects from the classroom and place them inside and outside the tray. Then they explain how they did it. For example: “I placed a doll inside the tray and a piece of chalk outside it”.

Repetition and practice are key to students learning these concepts. Constantly reinforce the meaning of “inside” and “outside” while carrying out these activities.

WRAP-UP

We place objects on a tray. We show the tray for a limited time and then cover the objects with a scarf. We ask students to remember which objects are inside the tray and which ones are outside.

Page of the Student’s Book

Students complete the page of the **Student’s Book** individually. When they finish, they compare their answers with hose of their classmatess.

LESSON 21

Geometry

Objective

Trace the shapes worked on.

Assessment

Show some skill in tracing the circle and the square.

Related lessons
Previous: 10 (EMAT Level 1)
Subsequent: 51 (EMAT Level 1), 32 (EMAT Level 2)

Materials

Manipulative materials
- *Tracing Shapes*

Classroom Box
- *Logic blocks*
- *2D Shape* Cards

Other
- Circular and square sponges
- Paint
- Markers
- Circular and square objects

WARM-UP

We show the cards with the circle and the square and explain to the students that they are going to play a game that involves sorting the shapes according to whether they are circles or squares. We ask them to choose a shape or an object and place it next to the corresponding card according to whether it is a circle or a square.
We encourage them to say out loud why they place each shape in one spot or another. For example, they could say that a ball is round like the circle, while a block has sides and corners like the square.
We help students to identify the distinctive features of each shape while they play, such as the absence of corners on the circle or the presence of equal sides on the square.
We ask about the differences between a circle and a square as they play. Possible answers: **One has vertices; One has sides; One rolls.**

• Problem of the day

We roll a circular piece of the logic blocks on the floor and then we roll a square piece. The students explain what happened: **Only the circular piece rolls.**

Focus on diversity

• Oxygen
In the manipulative activity, we can provide *Tracing Shapes* so that students can connect the dots to form circles and squares.

• Challenge
In the manipulative activity, we can ask students to draw circles and squares on a sheet of paper and encourage them to experiment with different sizes and locations on the paper.

TEACHING-LEARNING

• DemoGame

1. We place the geometric shapes on the floor so that students can see them. We choose a shape and show it to the group. We ask them to look for an identical shape and show it, explaining why they think they are the same. They can place the shape on top of the one we showed to check if they are identical.
2. We ask them to name the shape found and explain how they know its name. We encourage them to describe the shapes by tracing them with their fingers or simply looking at them.
3. We continue to show other shapes and students have to match them and name them again. Then they explain to us how they know. We help them describe the shapes and ask them again to trace them with their hand or by looking at them, talking about the curves, the straight sides, the vertices, etc.
4. To reinforce the idea of shapes, we ask them to walk on circles and squares drawn on the floor.

We recall the importance of using mathematical vocabulary in activities that involve describing, comparing and naming geometric shapes: circle, square, vertex (corners in the case of the square), sides, curves, lines, identical, different.

• Manipulative activity

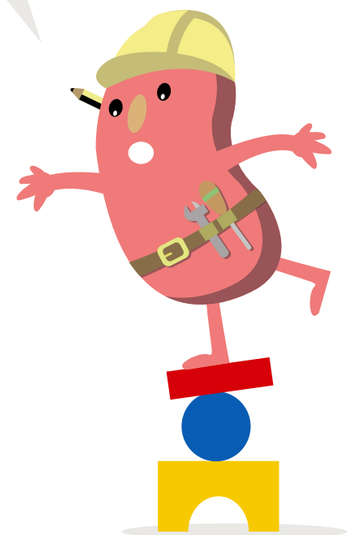
1. We provide students with circular and square-shaped sponges. We explain that they are going to explore these shapes while stamping with paint.
2. We show them how to dip the circular sponge in a paint color and stamp it on the paper to create circular patterns. Then, we repeat the process with the square sponge using another paint color, encouraging the students to stamp and create square patterns.
3. After stamping, we provide them with markers and ask them to trace circles or squares around the stamped shapes, highlighting and enlarging the geometric shapes in their creations.

WRAP-UP

In pairs, students explore the classroom in search of a circular-shaped object. Once they find a circular object, they need to imagine a new object that they could turn it into. For example, a clock could become a cookie, a button could transform into a pill or a hoop could be a steering wheel. We encourage them to come up with different ideas. We positively value all ideas and foster their divergent thinking. It is important to remember that there are no wrong answers and that their imagination is key.

Magic Blackboard

Students can practice tracing geometric shapes on the **Magic Blackboard** with *Tracing Shapes*.



LESSON 24

Measurement

Objective

Compare objects based on their volume.

Assessment

Use the concepts “bigger than” and “the biggest”.

Related lessons
Previous: 6 (EMAT Level 1)
Subsequent: 19, 72 (EMAT Level 2)

Materials

Other
- The story of *Goldilocks and the Three Bears*
- Objects of different sizes
- Play dough
- Music

Classroom management

The teacher must be an active facilitator during activities with manipulative materials, observing, listening and guiding the students’ interactions. It is essential that the teacher provides one-on-one support, stimulates exploration and problem solving, and encourages students to explain their thought processes.

WARM-UP

Start by reading or recalling the story of *Goldilocks and the Three Bears* highlighting the sizes of the bears and how Goldilocks interacts with the different sized objects in the bears’ home.
We introduce the three bears and describe their sizes: large, medium and small.
We use everyday objects of different sizes and ask them to match them to the bears based on their size. For example, associate the big plate with the big bear, the medium cup with the medium bear and the small toy with the small bear.

- **Problem of the day**

Marcos has 5 cents and he wants to buy a piece of gum that costs 5 cents. Can he buy it? **Yes.** Count the cents, “1, 2, 3, 4, 5”, and pay. The seller gives him the gum and he goes home. How many cents does he have left now?
Possible answer: **None, 0 cents.**

We apply the strategy of representing the problem with coins or with a drawing.

TEACHING-LEARNING

- **DemoGame**

1. We divide students into teams or let them search individually. The game consists of collecting large, medium and small objects (for example, building blocks) throughout the classroom. Students should find one object of each size.
2. When they find an object, they should identify its size (large, medium or small) and take it to the collection area.
3. Once all the students have found objects, we check to see if they collected objects of each size.
4. We encourage them to talk about the sizes of the objects found and compare them to each other

We recall the importance of using mathematical vocabulary in activities that involve comparing sizes: large, medium, small, and the use of comparative adjectives such as: “bigger than”, “smaller than”, “same as”.

- **Manipulative activity**

1. In groups of three, each student models a small, medium or large ball of play dough.
2. They place the balls next to each other and order them from smallest to largest.
3. Then they identify and state the placement of each student’s ball compared to the others: whether it is the small one, the medium one or the large one.
4. We ask, “Which ball is the largest of all?”; “What place does your ball occupy in the series from smallest to largest?”, etc.

WRAP-UP

We put on happy music and the students start dancing or moving freely throughout the space. When we stop the music, the students move together to form groups of three. Then, we instruct them to organize themselves in an orderly manner, from the largest to the smallest, when we give the signal.

Page of the Student’s Book

Students complete the page of the **Student’s Book** in pairs: they identify the size of the objects and match them.

What is at the bottom of the sea?

The learning situation is designed to work on the number sense (quantity and counting), and the spatial sense (geometric and spatial shapes), without forgetting the socio-affective sense. This learning situation is related to SDG 14 (life below water) aimed at conserving and sustainably using the oceans, seas and marine resources.

In "What is at the bottom of the sea?", objects are counted, sorted and placed and geometric shapes are identified. The proposed final product is the creation of decorative elements with an underwater theme for the staging of a play.

Materials

myroom
- *Ladder of metacognition*
- *Programming of learning situations*

Learning objectives

- Use strategies to count.
- Learn geometric shapes: cube, sphere, cone and cylinder.
- Match the numbers to the quantity that corresponds to them.
- Count out loud to 10.
- Practice the concepts of orientation "up" ,"down" and "next to".
- Compare quantities.
- Use the vocabulary "more than" and "less than" to compare quantities.
- Encourage autonomy when making decisions in problem-solving situations.
- Actively participate in teamwork.
- Recognize mistakes as an opportunity in learning mathematics

1

ACTIVATION
What do we know about the bottom of the sea?

1. To start, the teacher reads an email to students that is from a theater company asking for our help to create different decorative elements for a play with an underwater theme. They ask us to help them with decorations for the stage by creating different decorative elements.

   The initial situation aims to catch the attention of students so that when they carry out the activities, they work on the proposed knowledge and develop specific competences almost without realizing it.

2. In a large group we talk about what we can find at the bottom of the sea. We write down the answers on the learning situation mural.

3. We present what students are going to learn (learning objectives) with the development of the learning situation.

2

CONTEXT
What do they ask of us?

1. In groups and at different tables, we research the bottom of the sea with stories, magazines and images that we will find on the tables.

   Whenever possible, we can create a summary of the play and explain the plot to them in order to establish the situation that they can use to create.

   It is a good time to read one of the stories related to the theme we are working on. Moreover, while the students are looking at all the materials previously prepared by the teacher, we can play music related to the theme.

2. Then we complete the page individually.

3. Finally, it is a good time to reflect on the fact that marine pollution is reaching extreme levels and part of the solution depends on us.

3

EXPLORATION
What information do we have about the problem?

1. We proceed to analyze the information that we have so far by brainstorming. Then, in a large group we proceed to answer the questions:
   " What is the problem presented to us?"
   "What do we know?"
   "What do we need to know?"

   We guide the practice so that students complete the sentences with the missing words. Thus, we allow students to work in groups and we foster the participation of all students. We put the answers on the learning situation mural.

4

ORGANIZATION
What elements can we add to the play staging?

1. It is time to think about the elements that we can create for the play staging. We ask students in small groups to draw and design the elements they want to create for the decoration.

   We can guide them with different ideas. We mention everything we have seen so far and remind them that the elements can be fish, algae, coral, rocks, etc.

2. Next, when the different groups have decided on the elements, we share them and recall the concepts of geometric shapes that we have worked on (cube, sphere, cone and cylinder). We talk about how they can be used to represent different underwater elements.

Assessment

Challenge:

Creation of decorative elements for play staging.

Individual challenge, through daily observation and experimentation (through the different activities):

- Recognize mathematics present in everyday life.
- Understand the questions raised.
- Correctly count to 10.
- Match the numbers to the amount that corresponds to them.
- Practice the concepts of orientation "up", "down" and "next to".
- Learn flat and geometric shapes.
- Compare quantities.
- Recognize mistakes as an opportunity in learning mathematics.
- Actively participate in teamwork.
- Communicate possible mistakes with assertiveness.

5

STRUCTURING

How are we going to create our stage?

1. At this point, if necessary, we ask ourselves the problem again and leave five minutes to review the ideas that have come up so far.

2. Next, we share all the elements that we plan to create. First, we count these elements out loud, write the number on the blackboard and alk about possible sorting of the items. We guide sorting with questions such as:
   "Are all the elements the same size?"
   "Can we separate them based on the material we will use?"
   "Are they all animals or plants?"

3. Next, in a large group, we decide how we are going to create these elements and what materials we are going to use.

6

APPLICATION AND VERIFICATION

We create the staging elements

1. We provide students with the different arts and crafts materials so that they can start creating their decorative elements. During the process, we ask them to mention the elements they are using, practice the concepts of orientation and compare quantities.

2. We make a short reflection in which we will work on some mathematical concepts based on the following questions:
   "What things can we find at the bottom of the sea?"
   "What is there more of?"
   "Is it inside or outside the water?"

3. Once all the elements are finished, students can practice placing the elements "up", "down" and "next to" in the designated space.

4. Finally, we individually complete the page to consolidate these mathematical concepts.

FINAL PRODUCT

We explain the decorative elements that we created.

1. In groups, we ask students to explain the elements they created, why they chose them and where on the stage they are placed.

To make the learning situation more meaningful, we can record students' explanations on video and explain to them that we will send the video along with the decorative elements they created to the theater company that made the request.

7

REFLECTION

Let's all reflect together

1. In a large group, we reflect on what students learned, how they learned it and in what other situations they will be able to use it.

We end the lesson by projecting the **myroom** *Ladder of Metacognition.* We ask students to reflect on the learning process carried out during the learning situation.

EMAT materials

EMAT offers a set of materials to consolidate meaningful learning. Student materials include manipulative material and the notebook. Teachers have a detailed Teacher's Guide and access to myroom, the classroom manager that includes digital resources and training. Complete classroom materials are essential to be able to carry out the manipulative activities.

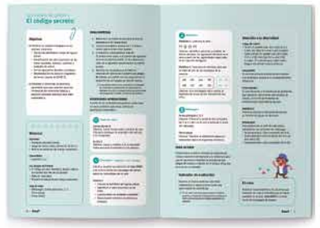
STUDENT MATERIALS

1 uni **Student's Book**

1 uni **Student materials**

1 uni **Magic Blackboard**

TEACHER MATERIALS

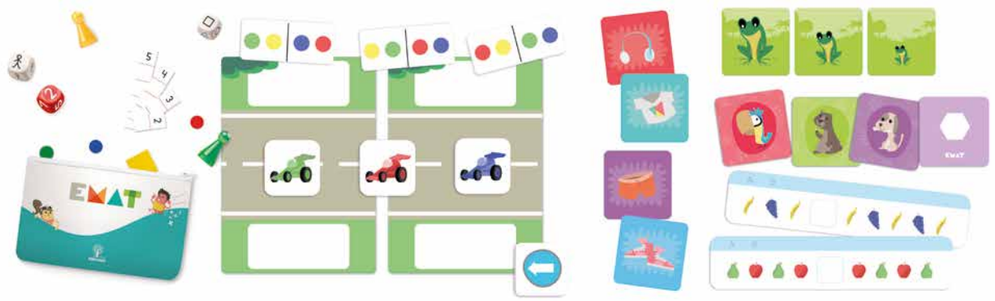


1 uni **Teacher's Guide (online)**

1 uni **myroom**

CLASSROOM MATERIALS

Classroom materials box + Individual case for the complete stage



Training and support

We propose several training and support models throughout the course so that in addition to getting the most out of your program, you can make great strides in your teacher training.

Personalized itinerary

Meetings with families

Support in communicating to families how their children learn with the program.

Advice and support

Resolving pedagogical concerns and support with the implementation of the program in the classroom.

Events in different cities

In-person tekman Academy

On-site training with leading speakers in education.

tekman Laboratory

Training sessions to share experiences with other teachers and receive training on the main topics in education.

Always available online

Training in tekman programs

Online courses to master the program and ensure optimal implementation.

Online tekman Academy

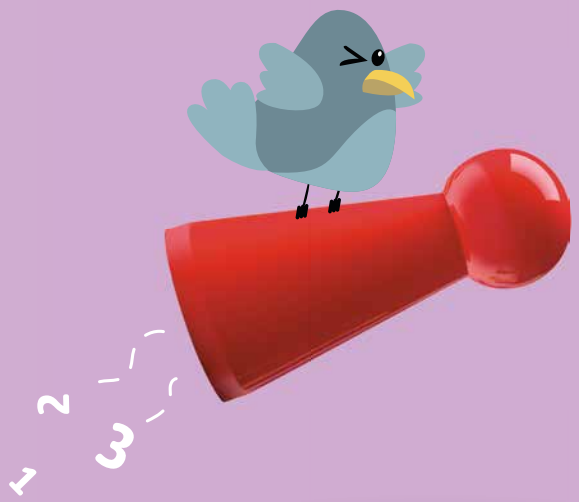
Online talks, conferences and interviews with professionals and experts in education.

EMAT is a mathematics teaching program based on innovative methodologies, which develops mathematical competences from the beginning of the early childhood education stage.

Its sequence is designed to foster a gradual understanding adapted to the developmental and cognitive level of the youngest students, while ensuring continuity with the later stages.

Thanks to the great range of cooperative, reflective and experiential situations, all students connect with mathematics.

With EMAT, mathematics are used and enjoyed.



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EMAT

• mathematics for life •

Level 1 sample

Name .....

With **EMAT**, we work on all adapted mathematical concepts
at students' maturational age, based on **six aspects**:

Measurement

Numbering

Geometry

Visual perception

Spatial orientation

Logical reasoning

EMAT

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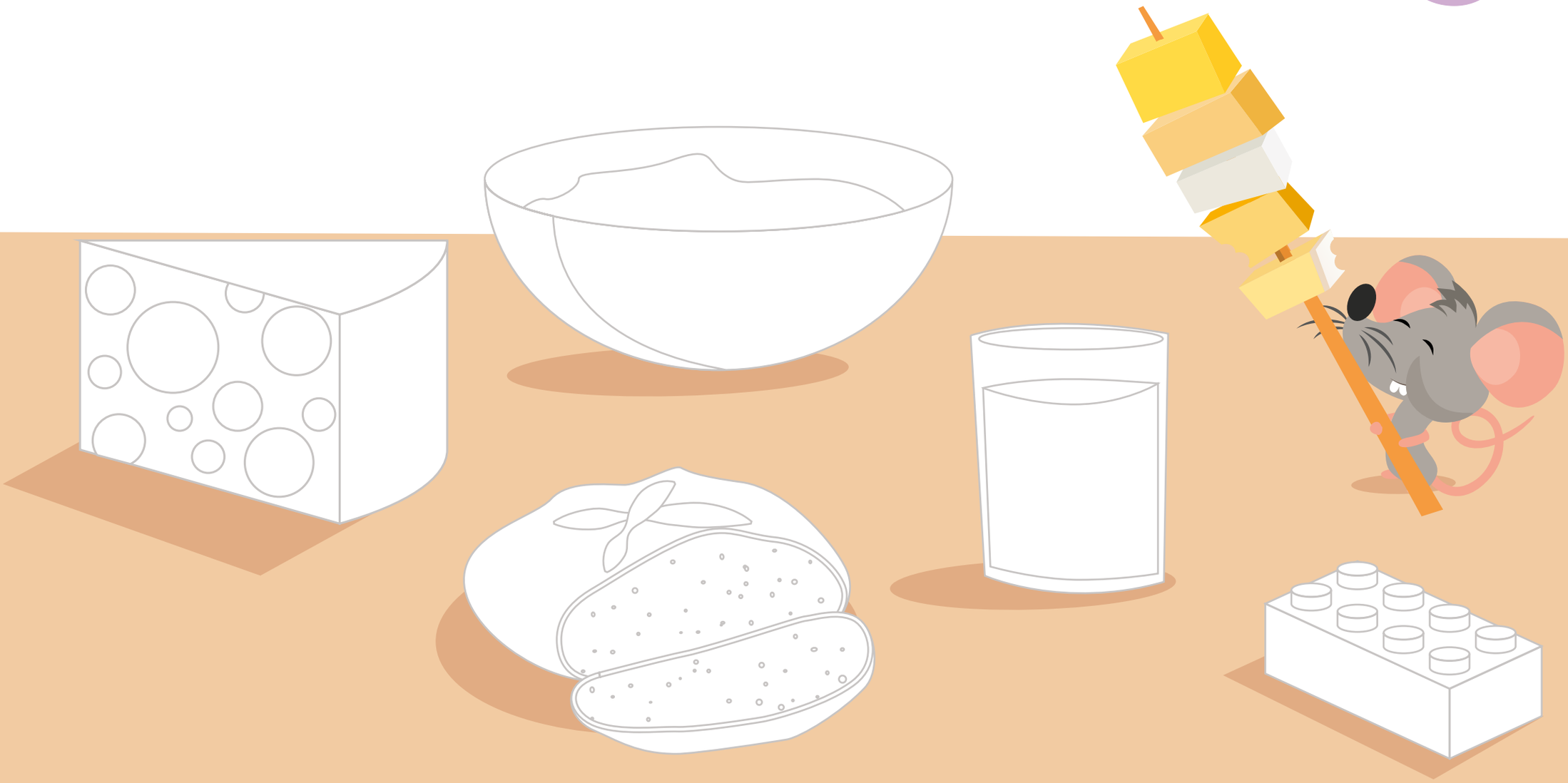
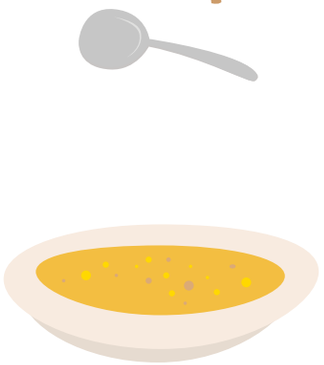
Colour the coins that are inside the chest.

EMAT

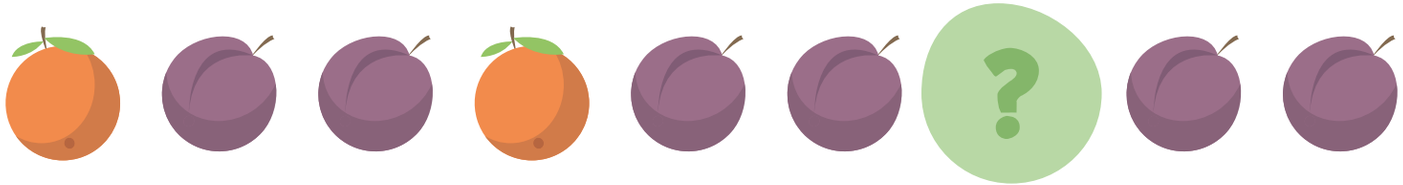
Colour the element that is not part of the collection.

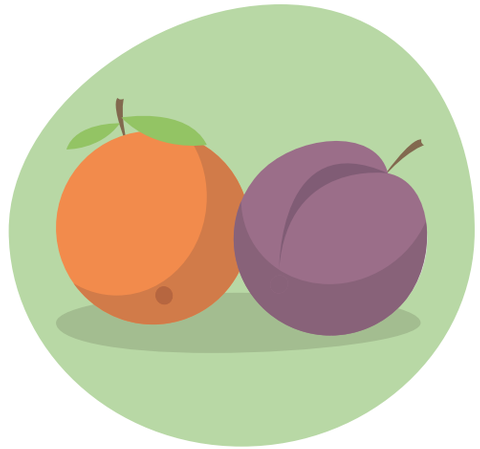


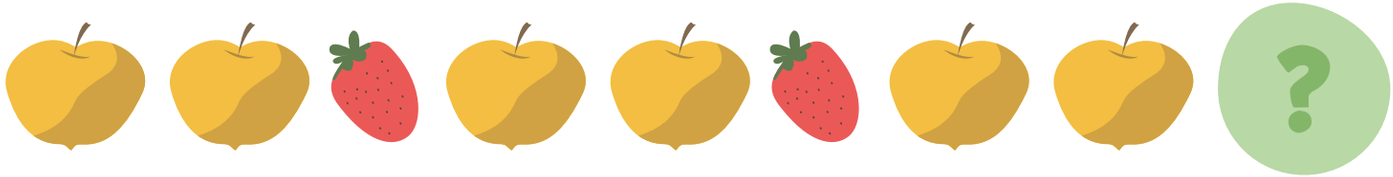
Match papa bear to his soup plate, his bowl, his spoon and his chair.



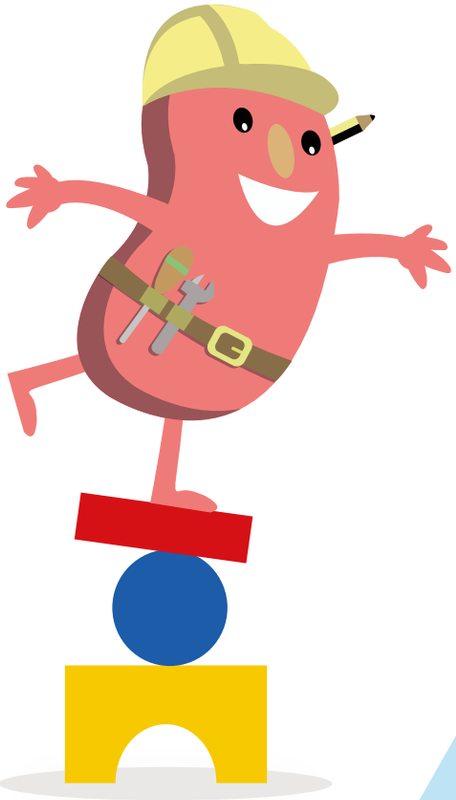
Circle the missing fruit to complete the series.

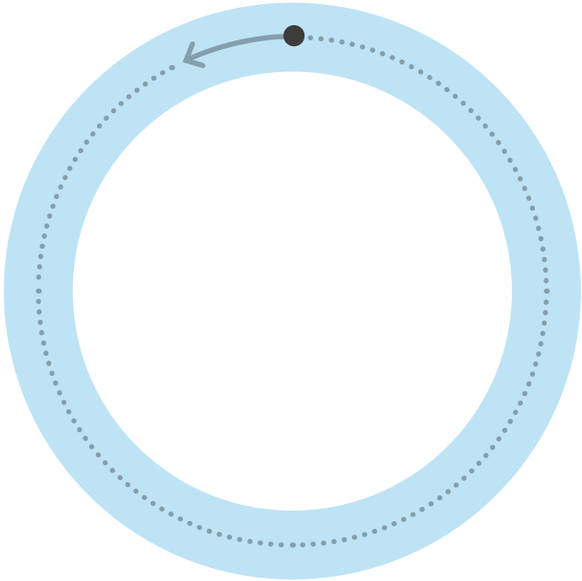


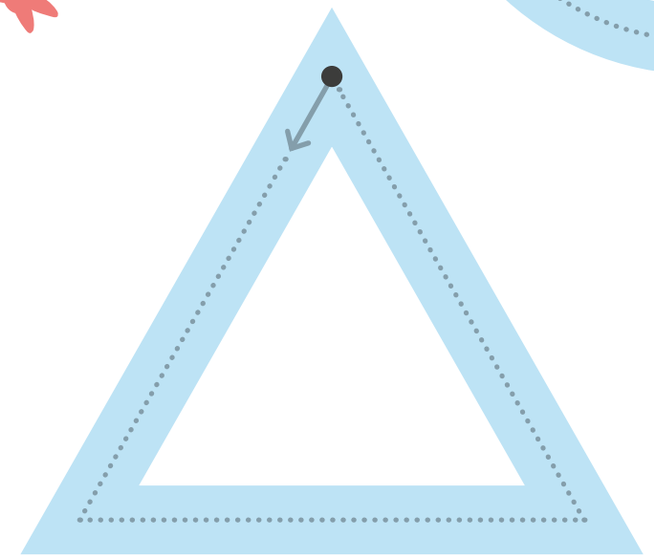


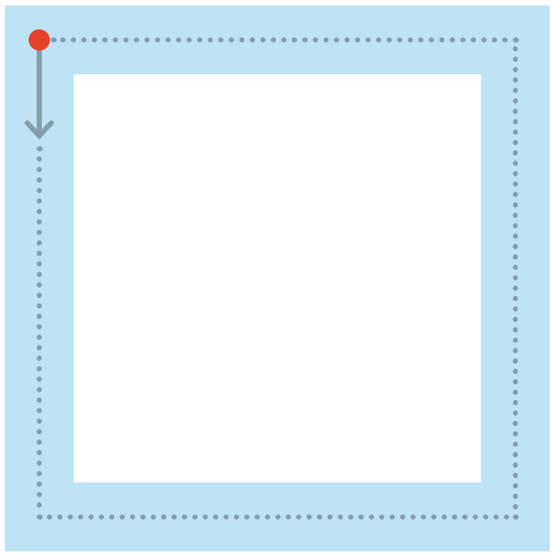


Trace the figures and stick the sticker on the same shape.



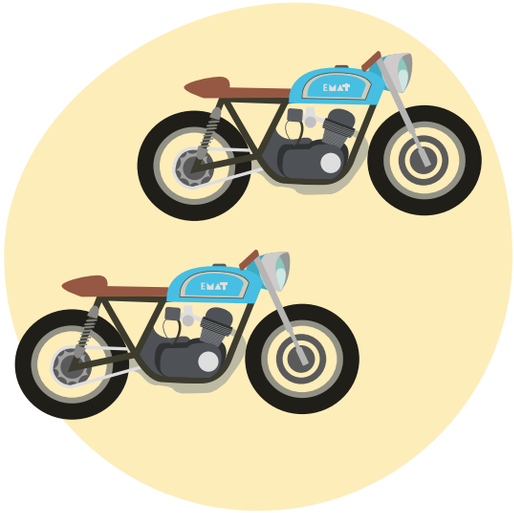






EMAT

Circle the correct number.



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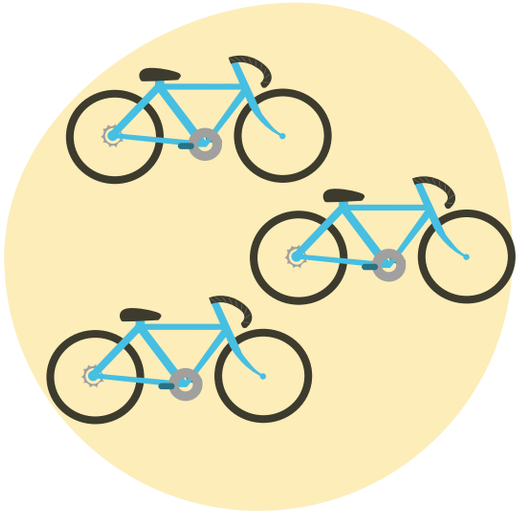

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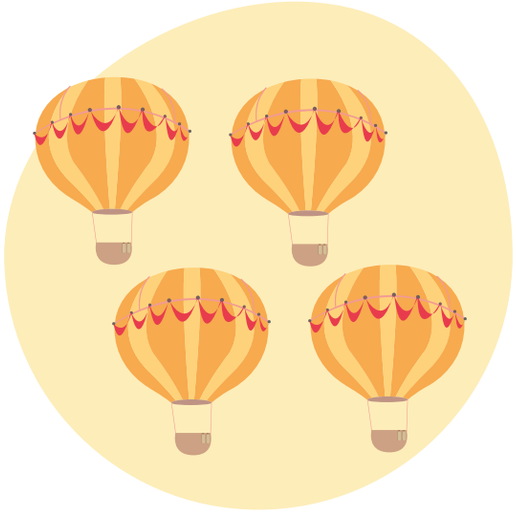
3

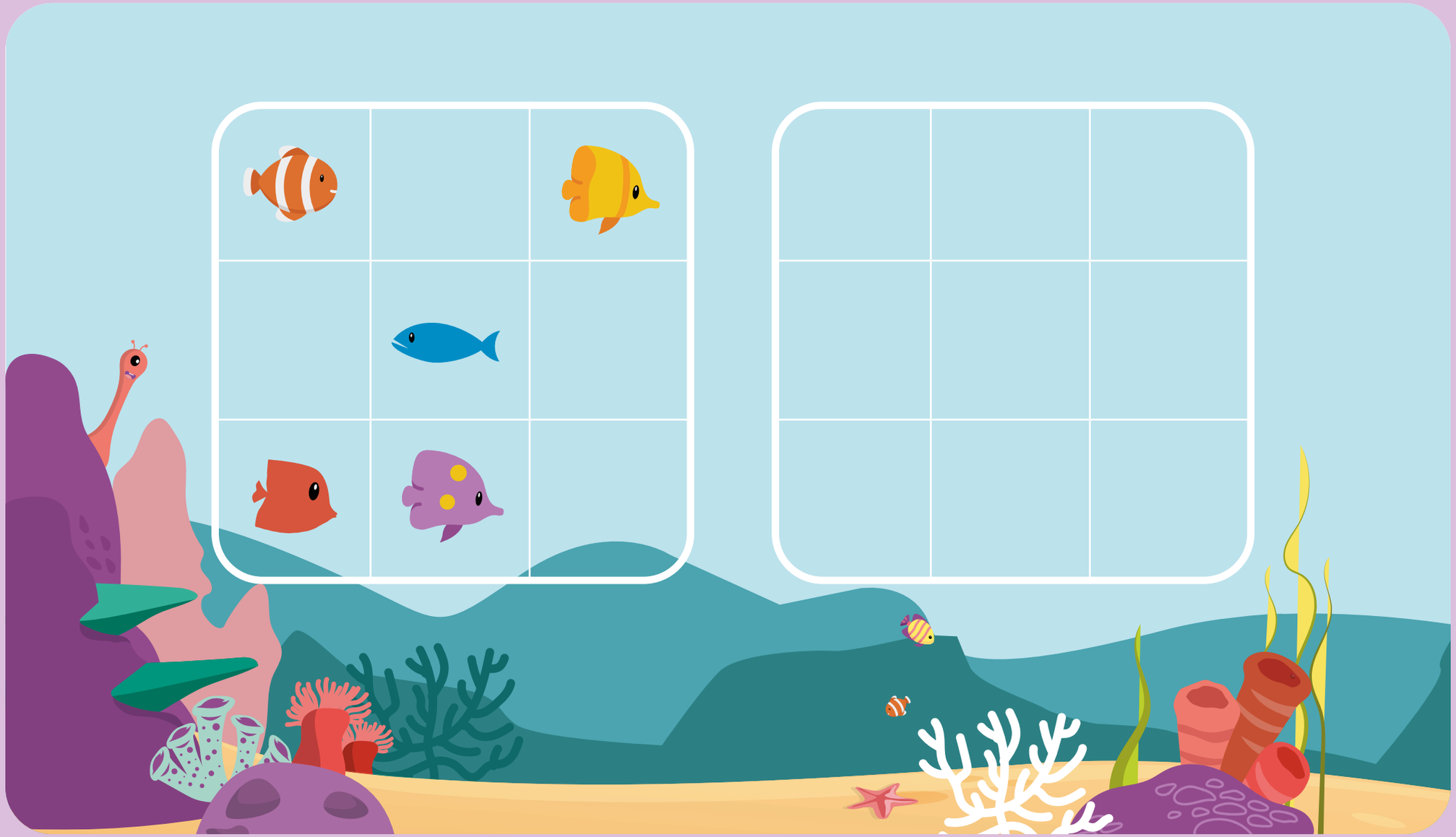


4

1

EMAT

Use the stickers to copy the model on the left.



LS3

Draw a fish above Max, a rock next to the coral, and a crab below Max.

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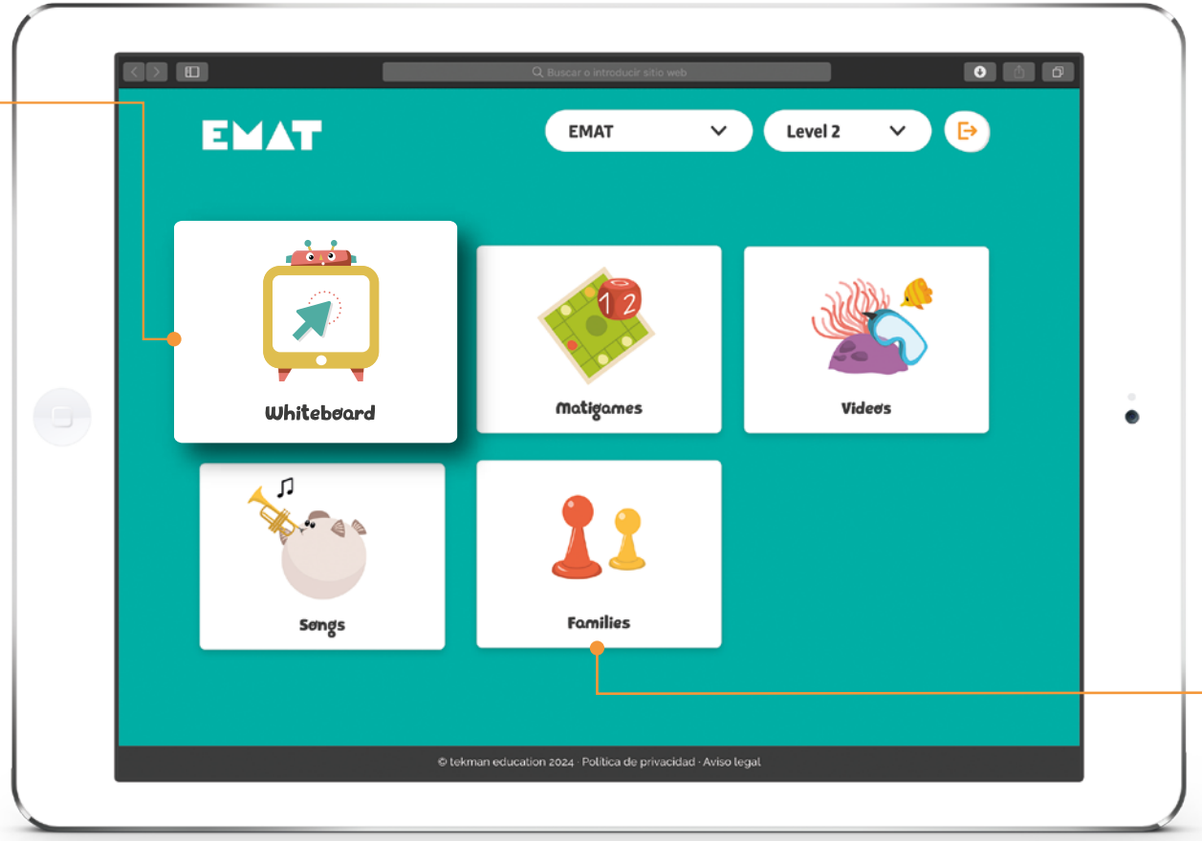
Look at everything we have prepared for this year!
Log in with your computer or tablet at

www.tekmandigital.com

Whiteboard:
hands-on interactive mathematics tool.

Matigames:
board games to practise maths skills.

Videos:
fun short films to learn mathematical concepts.

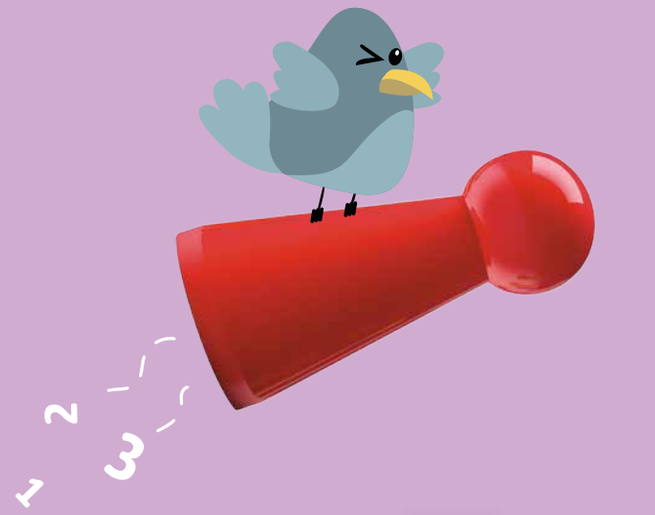


Songs:
musical compositions related to mathematics.

Families:
useful information to share with your family.

EMAT is a programme for teaching mathematics based on innovative methodologies to develop mathematical skills from an early age. Its sequence is designed to promote gradual understanding, and is adapted to the maturational and cognitive level of the youngest students while also ensuring continuity with later stages. The great diversity of cooperative experiences, both reflective and experiential, means all students connect with mathematics.

With EMAT, mathematics is used and enjoyed.



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