



LESSON PLANS
FOR
THE KINEMS LEARNING GAMES
PLATFORM

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INTRODUCTION

Kinems is a movement-based educational gaming platform for practicing multiple skills with multiple modalities and representations.

Using Kinems, students practice their physical and academic skills as well as their executive functions by rotating through 4 different learning stations:

1. The first one is the **movement station** in which students play the Kinems Learning Games using their hands and body gestures while practicing MATH & ELA goals, executive functions and OT/PT skills.
2. The second station is the **technology station**. Here students play the Kinems Learning Games using their laptops, PCs or tablets to work on academic goals while improving computer and fine motor skills.
3. The third station offers a **collaboration station**. In this station, students work in groups to cut, glue and play with the Kinems board games, promoting teamwork and cooperation as well as following instructions.
4. The last station is the **individual learning station**. Here, students work on the Kinems printable resources individually, using markers, pen and paper in order to generalize the acquired skills.

This document includes exemplary lesson plans to help teachers orchestrate their classrooms using the Kinems tools, while practicing academic skills with their students.

Lesson Plan 1

Matching lowercase to uppercase letters

Grade: Kindergarten

Subject: ELA

Unit: Print Concepts

Goal: Demonstrate understanding of the organization and basic features of print

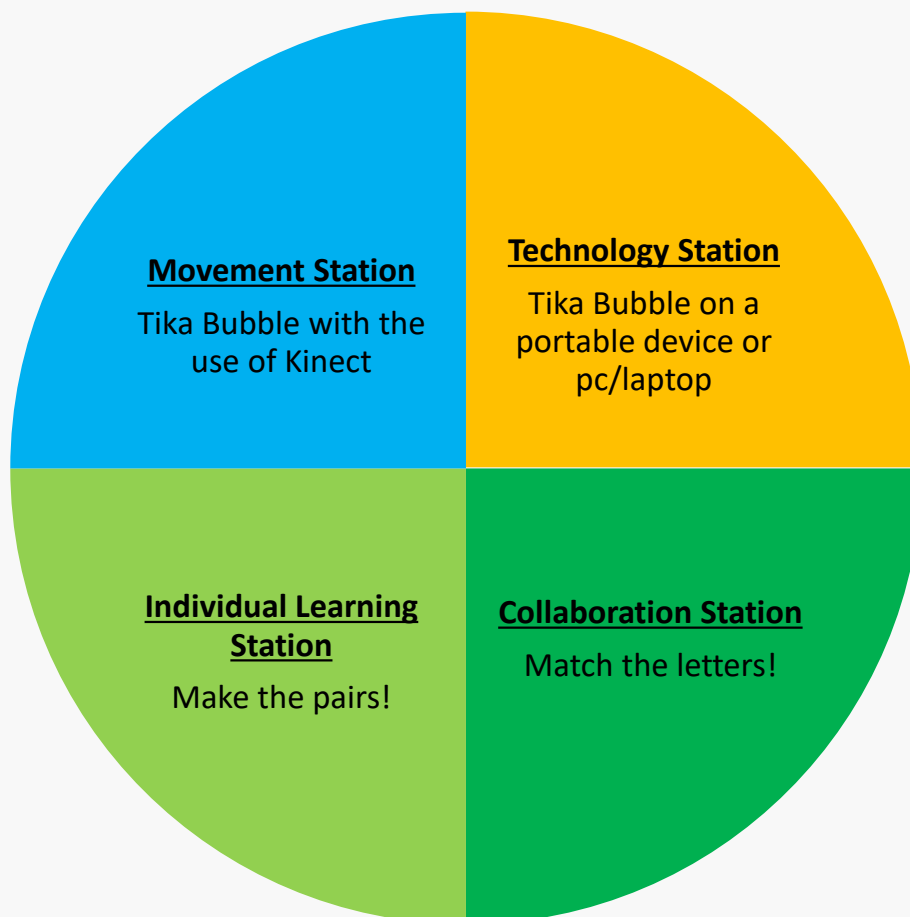
Learning Activity: Match the lowercase to the uppercase letters

Learning Goals

The student will be able to:

- ✓ Distinguish between uppercase and lowercase letters.
- ✓ Match the uppercase letter with the corresponding lowercase letter.
- ✓ Complete half and whole midline crossing.
- ✓ Coordinate their hand movements.

Learning Stations



Equipment & Resources

Movement Station	Kinems platform, Kinect Sensor
Technology Station	Kinems platform, portable device/pc/laptop
Collaboration Station	Kinems Board Game “ABC & Friends”
Individual Learning Station	Tika Bubble printable, pen/marker, eraser if laminated and use dry erase marker

Movement Station

Select from the "By goal" library the learning activity *Match the lowercase to the uppercase letters* and add the corresponding game; Tika Bubble.

In this game the student has to match uppercase with the lowercase letters while practicing bilateral coordination with the Kinect.

The student enters an imaginary world of a “tribe”, viewing uppercase and lowercase letters captured in bubbles at the left and right sides of a totem. The student must recognize the pairs of related items, grab the corresponding bubbles at each side of the totem and bang them simultaneously on the spikes located in the center of the totem. This unique game helps the student to improve eye-hand coordination for both sides of the upper body, which is an indication that both sides of the brain are communicating and sharing information with each other.

Learning Activities per station

TIP

You can increase the difficulty level by changing the Interaction Mode, activating game lives and/or timer.

Technology Station

Select from the "By goal" library the learning activity *Match the lowercase to the uppercase letters* and add the corresponding game; Tika Bubble..

TIP

You can increase the difficulty lever by activating game lives and/or timer.

Each student practices individually using a portable device, tablet or computer.

The student enters an imaginary world of a "tribe", viewing uppercase and lowercase letters captured in bubbles at the left and right sides of a totem. The student must recognize the pairs of related items, grab the corresponding bubbles at each side of the totem and bang them simultaneously on the spikes located in the center of the totem by tapping on the tablet or clicking with the mouse.



Game Settings

- **Music:** Disable/enable background music.
- **Sound effects:** Disable/enable sound effects while selecting an item.
- **Select hand:** The child uses both hands in this game. Help a student achieve hand movement synchronicity from both sides to the center.
- **Time to select item:** Time to remain stable to select an item. Reduce the time if the child shows arm stability. Options: 0.5 sec, 1 sec, 1.5 sec, 2 secs, 2.5 secs, 3 secs

- **Interaction mode:** Interaction mode allows teachers to select the action that students should practice. It can be **grab and move** when students grab an item (or items) and move it toward the totem's spikes, **grab** when the student only grabs the item, **delay and move** when students select an item (or items) without grabbing and move it toward the totem's spikes and **delay only** allows students to select an item without grabbing.
- **Game lives:** Enable or disable game lives depending on anxiety level of the child
- **Timer:** Time to finish pairing items. Disable this is if the student feels pressure - Timer value: 1 min, 1.5 mins, 2 mins, 2.5 mins, 3 mins, 3.5 mins, 4 mins, 4.5 mins, 5 mins
- **Number of items:** This shows how many items that the students need to

Individual Learning Station

Make the pairs!

Download the printable resource sheet of the Tika Bubble game from the Kinems platform. Print and share it to your students. They will need to make pairs by matching the uppercase with the lowercase letters using their pencils or markers. Or laminate the sheet and use dry erase markers.

Collaboration Station

Match the letters!

Use the "ABC & Friends" Kinems board game. Cut the pairs and shuffle and share the cards with the students. Have them match the uppercase with the lowercase letters. This can be assigned to the children to cut out. Have pairs of students work together. Each student can make a set to take home. They are self-correcting and thus a great resource to share with families.

pair. Options: 4 items, 6 items, 8 items

Lesson Plan 2

Trace the given letter

Grade: Kindergarten

Subject: ELA

Unit: Conventions of Standard English

Goal: Print upper and lowercase letters

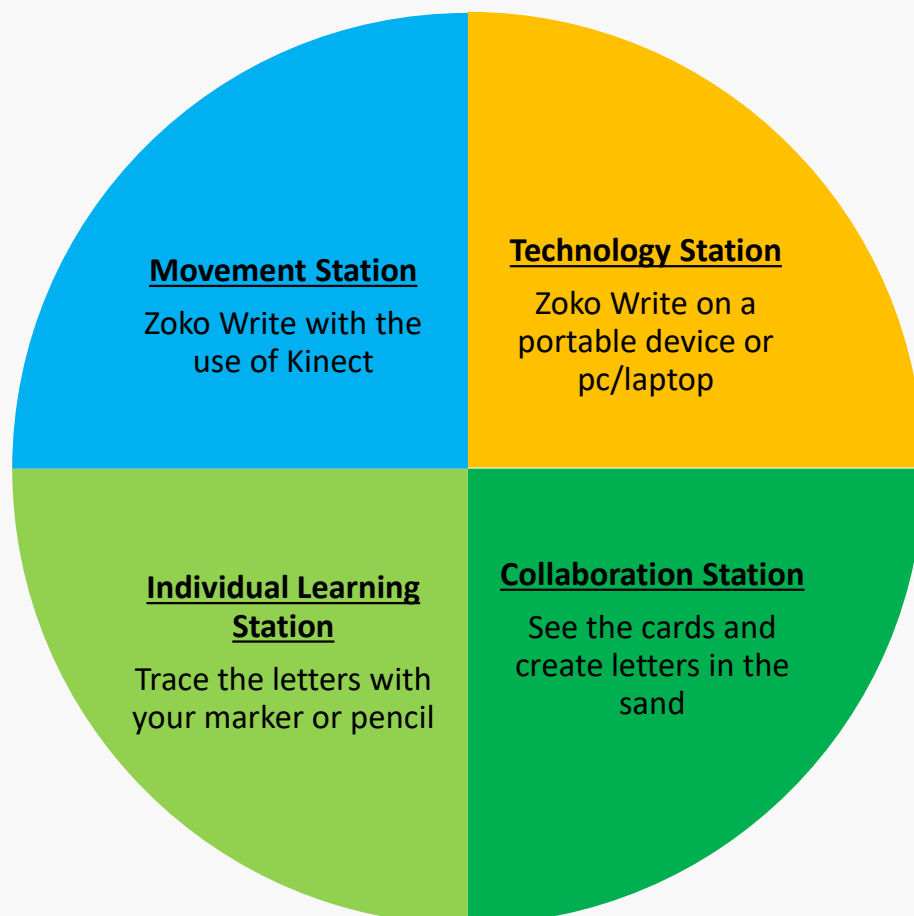
Learning Activity: Trace the given letter

Learning Goals

The student will be able to:

- ✓ Create letters using tracing.
- ✓ Recognize the letters of the alphabet.
- ✓ Move his hand correctly in order to print letters.
- ✓ Write in pencil and paper.
- ✓ Coordinate their hand and eye movement.

Learning Stations



Equipment & Resources

Movement Station	Kinems platform, Kinect Sensor
Technology Station	Kinems platform, portable device/pc/laptop/tablet
Collaboration Station	Kinems Board Game “ABC & Friends”
Individual Learning Station	Zoko Write printable pages pencil or pen/if laminated use dry erase marker and eraser or tissue.

Movement Station

Select the learning activity ***Trace the given letter*** from the "By goal" library and add the corresponding game: **Zoko Write**

In this game the student needs to trace letters of the alphabet while practicing gross motor skills, muscle memory, and eye-hand coordination, with the Kinect.

Students are taught to trace a letter by helping a mole-rat avatar named Zokor to dig a route for collecting apples. The route appears step by step according to the stroke order. Thus, the student needs to drag Zokor and carefully help it dig the trail for reaching an apple by the shortest undug path. Zokor has to avoid going to the edges of the field, because it will lose stamina while trying to dig. Also, if Zokor does not follow the shortest undug path for reaching an apple, it might get trapped.

Learning Activities per station

Technology Station

Select from the "By goal" library the learning activity *Trace the given letter* and add the corresponding game: **Zoko Write**

TIP

Have your students practice with a stylus to improve fine motor skills and pencil grip

Each student practices individually using a portable device, tablet or computer.

Students are taught to trace a letter by helping a mole-rat avatar named Zokor to dig a route for collecting apples. The route appears step by step according to the stroke order. Thus, the student needs to tap and drag Zokor and carefully help it dig the trail for reaching an apple by the shortest undug path. Zokor has to avoid going to the edges of the field, because it will lose stamina while trying to dig. Also, if Zokor does not follow the shortest undug path for reaching an apple, it might get trapped.



Game Settings

- **Music:** Disable/enable background music.
- **Sound effects:** Disable/enable sound effects while selecting an item.
- **Select hand:** The child uses both hands in this game. Help a student practice hand movement synchronicity from the sides to the center.
- **Time to select item:** Time to remain stable to select an item. Reduce the time if the child shows arm stability. Options: 0.5 sec, 1 sec, 1.5 sec, 2 secs, 2.5 secs, 3 secs

- **Timer:** Time to finish pairing items. Disable this is if the student feels pressure
- Timer value: 1 min, 1.5 mins, 2 mins, 2.5 mins, 3 mins, 3.5 mins, 4 mins, 4.5 mins, 5 mins
- **Game lives:** Enable or disable game lives depending on student anxiety.
- **Help:** Enable or disable the barriers that help show the students how the letter is written correctly.
- **Characters:** Choose the type of characters that the child is called to
handwrite: A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z.

Individual Learning Station

Trace the letters with your marker!

Download the printable resource pages of the Zoko Write game from the Kinems platform. Print and share it to your students. They will have to use their markers or pencils to trace the given letters. You can also laminate the worksheets to promote reusability using a dry erase marker and a tissue or eraser.

Collaboration Station

See the cards and create the letters in the sand!

Use the "ABC & Friends" Kinems board game. Shuffle and share the cards to the students and have them cooperate in pairs in order to create the letters with their fingers inside a sand box. You can also use rice or finger paints.



Lesson Plan 3

Identify the first letter in a 3 letter word

Grade: Kindergarten

Subject: ELA

Unit: Print Concepts

Goal: Demonstrate understanding of the organization and basic features of print

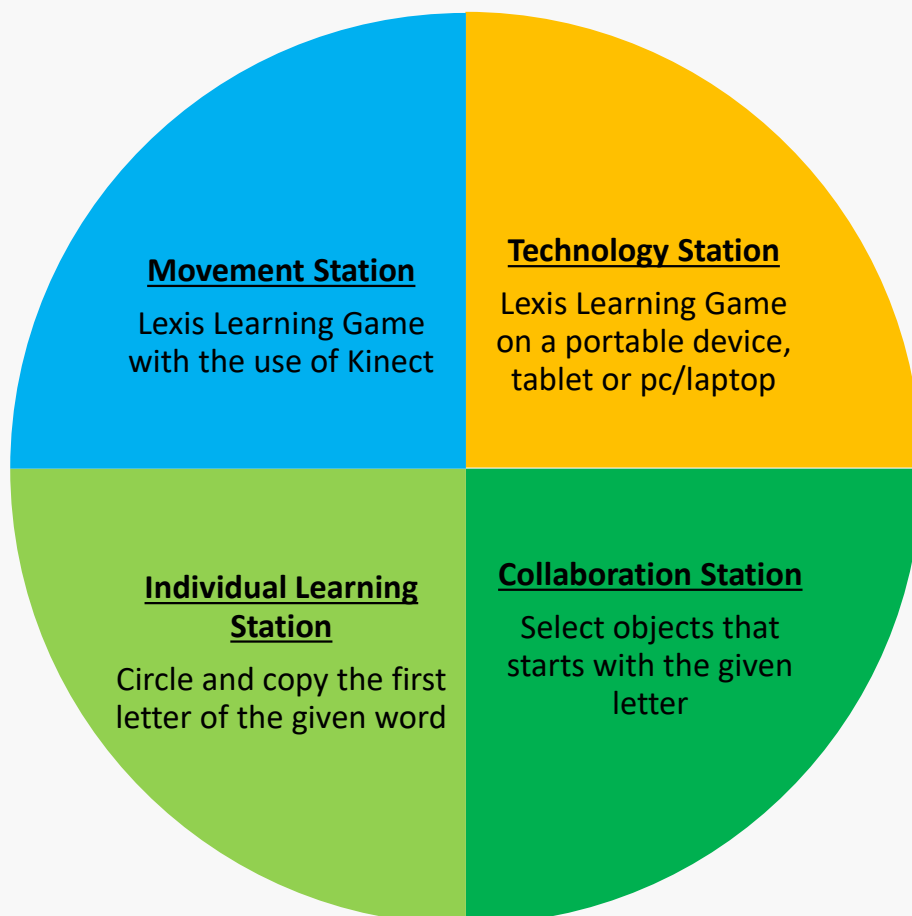
Learning Activity: Identify the first letter in a 3 letter word

Learning Goals

The students will be able to:

- ✓ Recognize and select the first letter of a given word.
- ✓ Name the first letter of a given word.
- ✓ Say the word.
- ✓ Pronounce the sound of the first letter of a given word.
- ✓ Use more words to express themselves.
- ✓ Coordinate hand and eye movements needed to complete the game.

Learning Stations



Equipment & Resources

Movement Station	Kinems platform, Kinect Sensor
Technology Station	Kinems platform, portable device/pc/laptop/tablet
Collaboration Station	Kinems Board Game “ABC & Friends”
Individual Learning Station	Lexis printable resources, pen/marker, if laminated use dry erase marker and eraser or tissue

Movement Station

Select the learning activity ***Identify the first letter in a 3 letter word*** from the "By goal" library and add the corresponding game: Lexis.

In this game the student has to recognize and select the first letter of a given word, practicing gross motor skills, eye-hand coordination and fine motor skills, with the Kinect.

The student is offered an incomplete “egg-word” and has to grab the correct missing egg-letter from a set of given egg-letters. They must place it carefully and appropriately in the correct order to fill it in so that the “egg-word” is packed. If the student makes a wrong choice (wrong letter or wrong placement) the egg falls and breaks!

Learning Activities per station

Technology Station

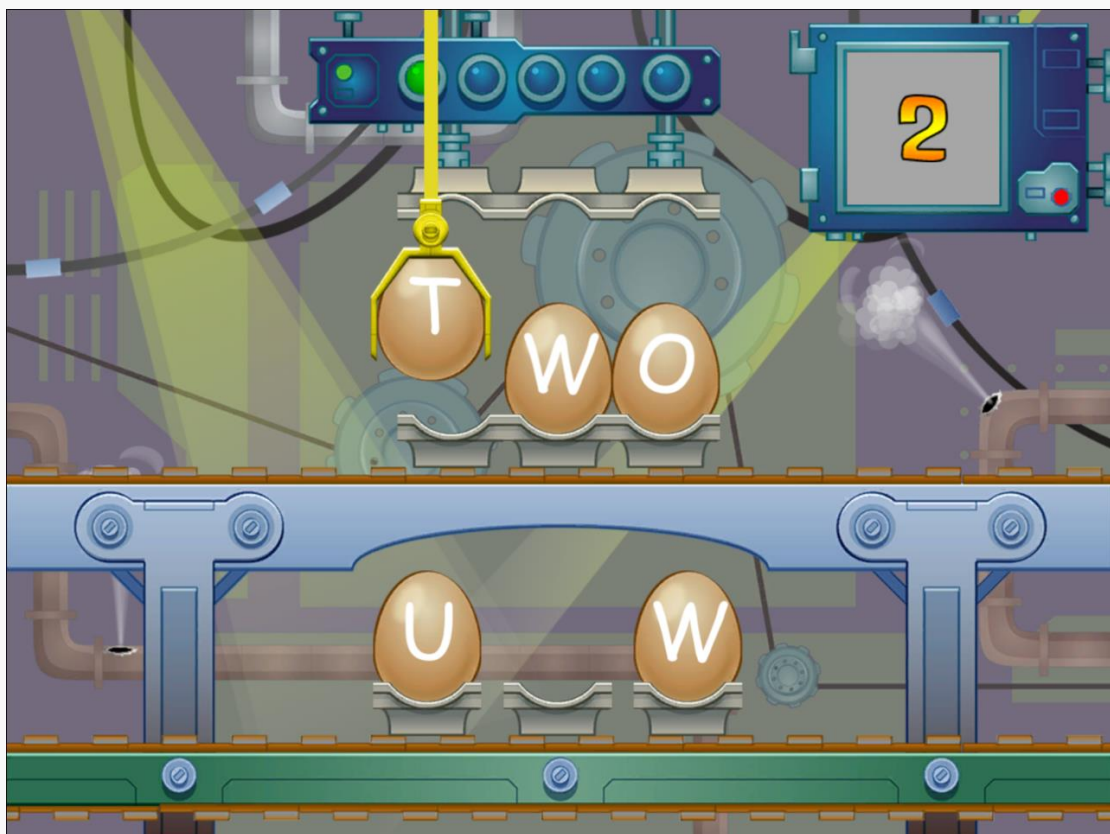
Select the learning activity **Identify the first letter in a 3 letter word** from the "By goal" library the and add the corresponding game: **Lexis**.

Each student practices individually using a portable device or computer.

TIP

Have your students practice with a stylus to improve fine motor skills and pencil grip

The student is offered an incomplete "egg-word" and has to grab by tapping the correct missing egg-letter from a set of given egg-letters. They must place it carefully and appropriately in order to fill it in so that the "egg-word" is packed. If the student makes a wrong choice (wrong letter or wrong placement) the egg falls and breaks!



Game Settings

- **Music:** Disable/enable background music.
- **Sound effects:** Disable/enable sound effects while selecting an item.
- **Select hand:** The child uses both hands in this game. Help assist a student in hand movement synchronicity from the sides to the center.
- **Time to select item:** Time to remain stable to select an item. Reduce the time if the child shows arm stability. Options: 0.5 sec, 1 sec, 1.5 sec, 2 secs, 2.5 secs, 3 secs

- **Interaction Mode: Grab/Time Delay** interaction mode allows teachers to select the action that students should use for practice. It can be Grab or Time Delay according to the skill level of the child.
- **Timer:** Time to finish pairing items. Disable this if the student feels pressure
- Timer value: 1 min, 1.5 mins, 2 mins, 2.5 mins, 3 mins, 3.5 mins, 4 mins, 4.5 mins, 5 mins
- **Game lives:** Enable or disable game lives depending on student anxiety.
- **Visual Help:** Enable or disable. This refers to picture hints on the top right corner of the screen. The existence of the visual aid, can help early readers.

Individual Learning Station

Circle and copy the first letter of the given word!

Download the printable of the Lexis game from the Kinems platform. Print and share it with your students. They will have to use their markers to circle and copy the correct letter. You can also laminate the worksheets to promote reusability with a dry erase marker and eraser or tissue.

Collaboration Station

See the cards and create the letters in the sand!

Use the "ABC & Friends" Kinems board game. Shuffle and share the cards to the students and have them cooperate in groups in order to select objects in the classroom that start with the given letter. You can also gather magazines and have them glue the chosen letter on a blank paper and cut out items to glue that begin with that letter. Post these around the room to make a display of items beginning with a chosen letter.

Lesson Plan 4

Match the letters that you hear to make pairs

Grade: Kindergarten

Subject: ELA

Unit: Print Concepts

Goal: Demonstrate understanding of the organization and basic features of print

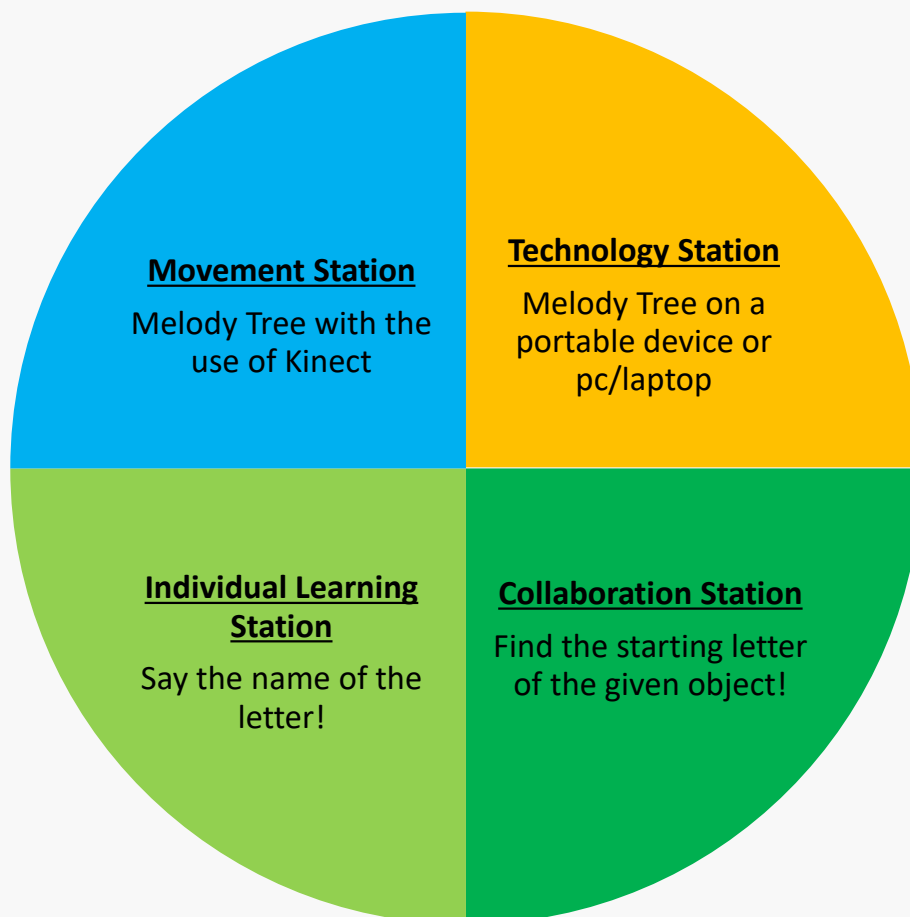
Learning Activity: Match the letters that you hear to make pairs

Learning Goals

The student will be able to:

- ✓ Distinguish the name of the letters.
- ✓ Match the uppercase letters of the alphabet based on their sound.
- ✓ Coordinate the hand movements when making a choice
- ✓ Remember where the matching letters are located on the board.

Learning Stations



Equipment & Resources

Movement Station	Kinems platform, Kinect Sensor
Technology Station	Kinems platform, portable device/pc/laptop or tablet
Collaboration Station	Kinems Board Game "ABC & Friends"
Individual Learning Station	Melody Tree printable, pen/marker, if laminated use dry erase marker and eraser or tissue

Learning Activities per station

Movement Station

Select the learning activity ***Match the letters that you hear to make pairs*** from the "By goal" library and add the corresponding game: **Melody Tree**.

The student must recognize and find the matching pairs of sounds that are hidden in the melody keys hanging from a branch of a melody tree. The sounds can be heard and revealed when the student keeps their hand still for few seconds on a melody key.

“The Melody Tree” game provides opportunities to increase student’s concentration and audio-visual memory in a unique and engaging way.

The game supports student’s auditory memory training and linguistic development at the same time.

The teacher can provide clues that offer extra help in the game by enabling the child to see the corresponding images of the hidden sounds. To add challenge to the game, visual and/or audio distractors can be added. This game enhances children’s memory, attention and concentration by engaging in a game format. Sound recognition lays the foundational skills needed to discriminate sounds of letters and phonemes required for reading.

Technology Station

Select the learning activity ***Match the letters that you hear to make pairs*** from the "By goal" library and add the corresponding game: **Melody Tree**.

Each student practices individually using a portable device or computer.

Students tap on top of the rocks to listen to the hidden sounds in order to create pairs of letters. You might need to provide head phones to facilitate the use of this game for each child. The alternative is to work in pairs and listen to the device together debating where the pair of sounds resides.



Game Settings

- **Music:** Disable/enable background music.
- **Sound effects:** Disable/enable sound effects while selecting an item.
- **Select hand:** The child uses both hands in this game. Help a student in hand movement synchronicity from the sides to the center..

- **Time to select item:** Time to remain stable to select an item. Reduce the time if the child shows arm stability and concept mastery. Options: 0.5 sec, 1 sec, 1.5 sec, 2 secs, 2.5 secs, 3 secs
- **Timer:** Time to finish pairing items. Disable this is if the student feels pressure - Timer value: 1 min, 1.5 mins, 2 mins, 2.5 mins, 3 mins, 3.5 mins, 4 mins, 4.5 mins, 5 mins
- **Grid size:** Grid size shows how many sounds there are on the screen and how many sounds the students have to hear in order to complete the game. Options: 6 items, 8 items, 10 items, 12 items. Use your knowledge of the student to determine the level of challenge.
- **Visual help:** This option shows pictures of animals or things that make particular sounds in the grids. Using the visual aid, students can correlate sounds with pictures. Options: On/Off
- **Distractor:** This option enables distracters while choosing items. The distracters are such as random shake of items and splashing stars. Options:

Individual Learning Station

Say the name of the letter!

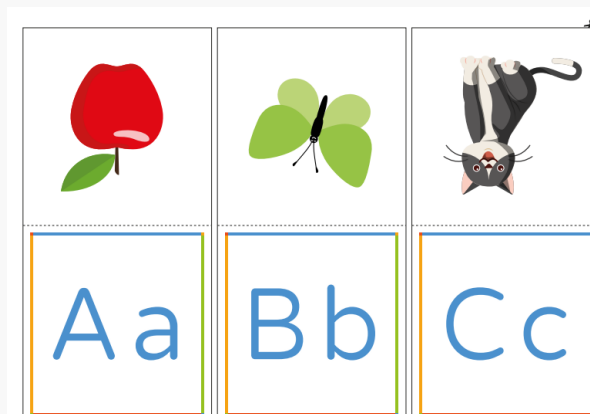
Download the printable resources of The Melody Tree game from the Kinems platform. Print and share it with your students. They will have to recognize and say the name of the given letters.

Collaboration Station

Find the starting letter of the given object!

Use the "ABC & Friends" Kinems board game. Shuffle and share the cards to the students and have them cooperate in groups in order to find the starting letter of the given objects.

None/Visual/Audio.



Lesson Plan 5

Sort the objects into the right color

Grade: Kindergarten

Subject: ELA

Unit: Vocabulary Acquisition and Use

Goal: Sort common objects into categories to gain a sense of the concepts the categories represent

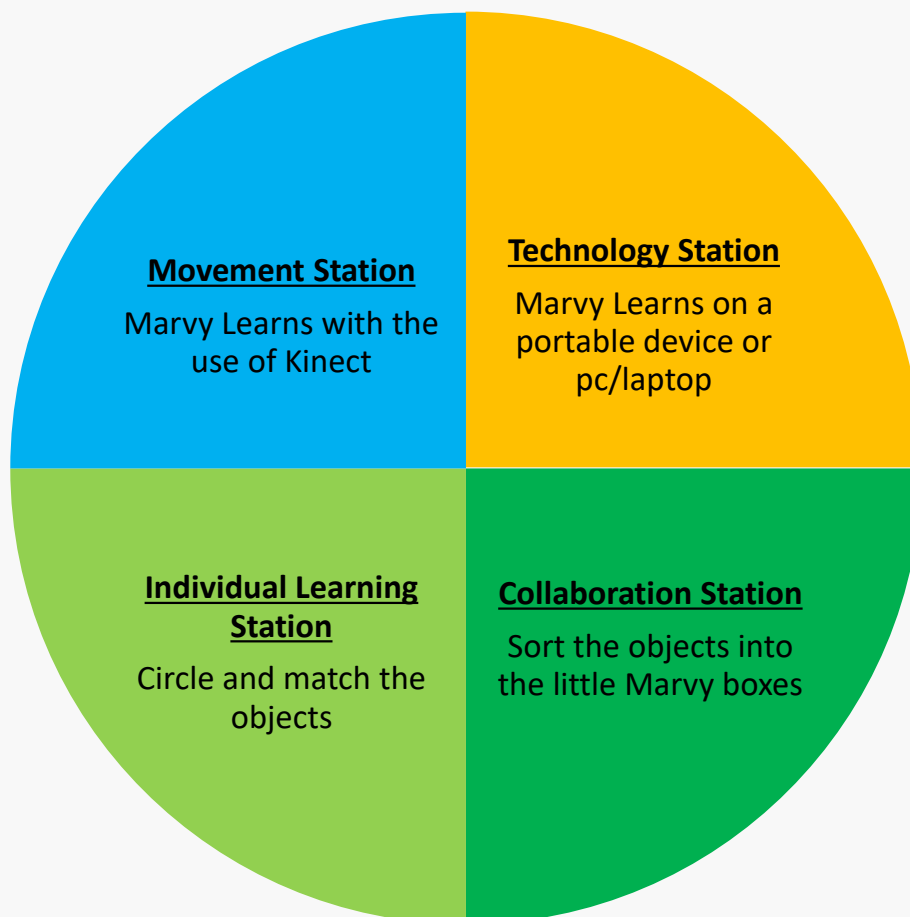
Learning Activity: Sort the objects into the right color

Learning Goals

The student will be able to:

- ✓ Distinguish and name after the colors.
- ✓ Sort objects based on color
- ✓ Coordinate the hand movement.

Learning Stations



Equipment & Resources

Movement Station	Kinems platform, Kinect Sensor
Technology Station	Kinems platform, portable device/pc/laptop
Collaboration Station	Kinems Board Game "Marvy Learns"
Individual Learning Station	Marvy Learns printable resource sheets pen/marker, if laminated, use dry erase markers and eraser or tissue

Learning Activities per station

Technology Station

Select the learning activity ***Sort the objects into the right color*** from the "By goal" library and add the corresponding game: **Marvy Learns**.

Each student practices individually using a portable device, tablet or computer.

Students tap on top of the cards with the objects and drag them onto the right boxes based on their color.

Movement Station

Select the learning activity ***Sort the objects into the right color*** from the "By goal" library and add the corresponding game: **Marvy Learns**.

The student controls the avatar in order to pick up the objects and place them into the correct boxes based on their color.

Marvy Learns is specifically designed to provide experiences in Piagetian Pre-operational skills, motivating children to develop their logical and inductive thinking skills.

An additional benefit of this game is the increase in vocabulary skills. Students learn to associate the displayed objects with the defined vocabulary words represented. They choose the items that correspond to the vocabulary that describes each featured category presented.

The instructor can choose how the student can play the game based on occupational goals. For example, the student can play with one hand or both hands. The game can be set to have a specific time limit during each learning game session.

Marvy Learns is the perfect active learning game to help your students increase and develop gross motor skills, visual perception and eye-hand coordination.



Game Settings

- **Music:** Disable/enable background music.
- **Sound effects:** Disable/enable sound effects while selecting an item.
- **Select hand:** The child uses both hands in this game. Help a student in hand movement synchronicity from the sides to the center.
- **Time to select item:** Time to remain stable to select an item. Reduce the time if the child shows arm/hand stability and concept mastery. Options: 0.5 sec, 1 sec, 1.5 sec, 2 secs, 2.5 secs, 3 secs
- **Timer:** Time to finish pairing items. Disable this is if the student feels pressure - Timer value: 1 min, 1.5 mins, 2 mins, 2.5 mins, 3 mins, 3.5 mins, 4 mins, 4.5 mins, 5 mins
- **Game lives:** Enable/Disable. "Game lives" option is depicted by the three hearts at the right corner at the top of the screen. Disable if the student is anxious.
- **Number of cards:** This shows the number of cards presenting words or images that the child is called to categorize. Options: 4, 5, 6.

- **Interaction mode:** Interaction mode allows teachers to select the action that students should use for practice. It can be **Grab and move** when students Grab the cards or **Delay and move** when students select cards by keeping their hand steady over them in order to place them into the boxes. Options: Both hands - Delay and move; Both hands - Grab and move; One hand - Delay and move; One hand - Grab and move.

Individual Learning Station

Circle and match the objects!

Download the printable pages of the Marvy Learns game from the Kinems platform. Print and share it to your students. They will have to circle the objects, draw a line and sort them out in the corresponding box based on their color. Laminate the sheets and use dry erase markers to reuse the resources.

Collaboration Station

Sort the objects into the little Marvy boxes!

Use the "Marvy learns" Kinems board game. Share the printable material to your students and have them cut, glue and create their Marvy boxes. Then, have them cooperate in groups in order to sort out the object cut outs based on their color.



Lesson Plan 6

Count up to 10 by ones

Grade: Kindergarten

Subject: MATH

Unit: Printed Number Concepts

Goal: Know number names and number sequence

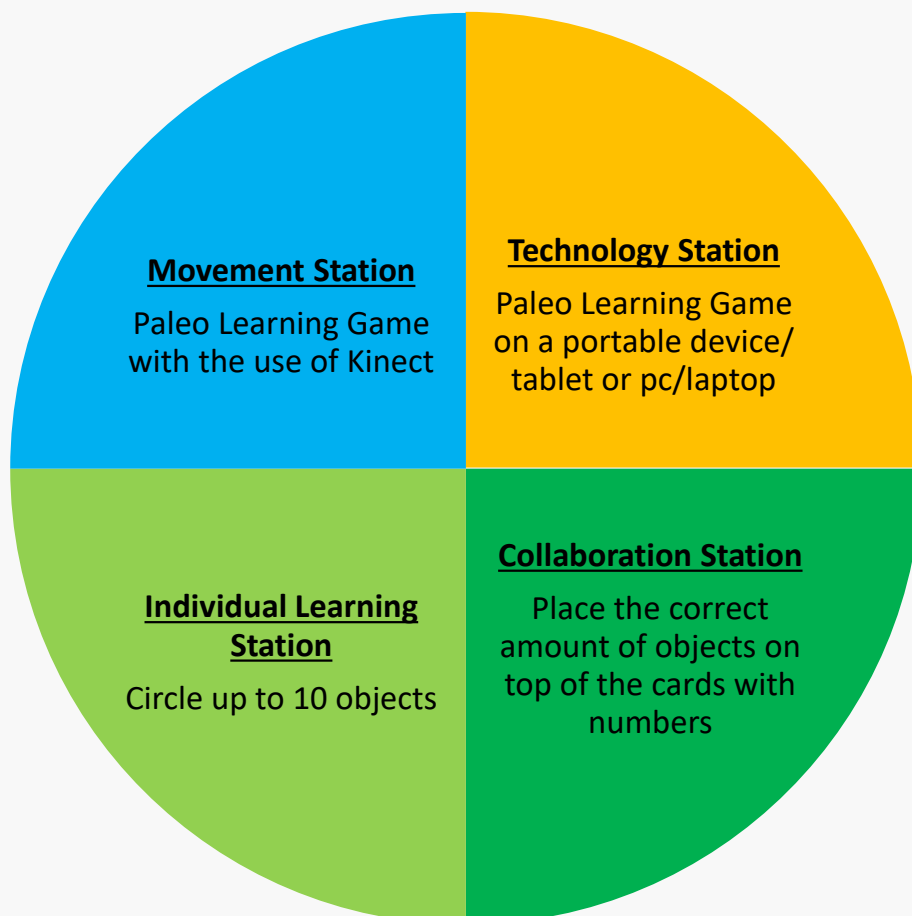
Learning Activity: Count up to 10 by ones

Learning Goals

The students will be able to:

- ✓ Recognize and select the numbers from 1 to 10.
- ✓ Count from 1 to 10
- ✓ Understand that each number matches with a specific amount of objects
- ✓ Coordinate hand and eye movements.

Learning Stations



Equipment & Resources

Movement Station	Kinems platform, Kinect Sensor
Technology Station	Kinems platform, portable device/tablet/pc/laptop
Collaboration Station	Kinems Board Game "Who's Counting"
Individual Learning Station	Paleo printable resources, pen/marker or if laminated use dry erase markers and erasers or tissues

Learning Activities per station

Movement Station

Select the learning activity ***Count up to 10 by ones*** from the "By goal" library and add the corresponding game: Paleo.

In this game the student has to recognize and collect 10 of the same objects, practicing gross motor skills, eye-hand coordination and side walking using the Kinect.

When your students enter the Paleo game, they are represented by a prehistoric man or woman avatar that exists in a prehistoric world of dinosaurs and falling objects. They need to move their character left and right to collect the falling objects that answer the math problems or cognitive tasks that the teacher has designed for them. They face various types of stimuli: numbers, food types, bombs, bottles with liquid related to stamina (lives of the character) and to resistance to bombs. These are presented randomly to make the game challenging and fun.

You can customize the settings to individualize the challenge to the student's level and ability by choosing among several levels of difficulty with regards to the speed of the falling objects or bombs that are being dropped by flying dragons which need to be avoided. The hungry dinosaurs also move towards the prehistoric man or woman.

Your students will need to make coordinated movements to avoid dinosaurs and falling bombs. They should respond only to the correct falling objects (go stimuli), and to inhibit their responses to bombs or unrelated objects (no-go stimuli). Thus, this game strengthens children's cognitive ability of response inhibition and improves their executive function attention and reasoning ability. Reasoning ability heavily depends on inhibitory control, i.e., blocking information irrelevant to the target and ignoring irrelevant environmental distractions.



Game Settings

- **Music:** Disable/enable background music.
- **Sound effects:** Disable/enable sound effects while selecting an item.
- **Select hand:** The child uses both hands in this game. Help a student improve hand movement synchronicity from the sides to the center.
- **Time to select item:** Time to remain stable to select an item. Reduce the time if the child shows arm stability. Options: 0.5 sec, 1 sec, 1.5 sec, 2 secs, 2.5 secs, 3 secs
- **Timer:** Time to finish pairing items. Disable this is if the student feels pressure - Timer value: 1 min, 1.5 mins, 2 mins, 2.5 mins, 3 mins, 3.5 mins, 4 mins, 4.5 mins, 5 mins
- **Character:** Teachers can select the character/avatar which the student will control.
- **Game difficulty:** The option of “Game Difficulty” sets the complexity of the stage and makes the game more challenging by changing the speed of the falling items. When bombs and/or dinosaurs are enabled, game difficulty option affects their display speed as well. Options: Easy, Medium, Hard. Adjust the game difficulty according to the needs of the child.
- **Bomb:** Enable/disable bombs in order to improve motor planning.
- **Dinosaurs:** Enable/disable dinosaurs in order to improve motor planning.
- **Wrong collectibles:** This shows the different types of objects falling from the sky increasing the level of game difficulty. Options: 0, 1, 2, 3
- **Category:** Item categories allow teachers to match students’ skills with items available in the game. These items can be changed according to the teacher’s preference and children’s needs for practicing with items or math concepts

(prime, composite numbers or multiples). Options: Meat, Grains, Dairies, Fish, Fruits, Vegetables.

- **Game lives:** Enable or disable game lives.



Individual Learning Station

Circle 10 objects

Download the printable of the Paleo game from the Kinems platform. Print and share it to your students. They will have to use their markers to circle 10 objects. You can also laminate the worksheets to promote reusability using a dry erase marker.

Collaboration Station

Place the correct amount of objects on top of the cards with numbers!

Use the "Who's Counting" Kinems board game. Shuffle and share the cards to the students and have them cooperate in groups in order to place the correct amount of objects (i.e. toys, markers, balls) on top of the given cards.

Lesson Plan 7

Compose simple shapes to form larger shapes

Grade: Kindergarten

Subject: MATH

Unit: Shapes and Angles

Goal: Analyze, compare, create and compose shapes

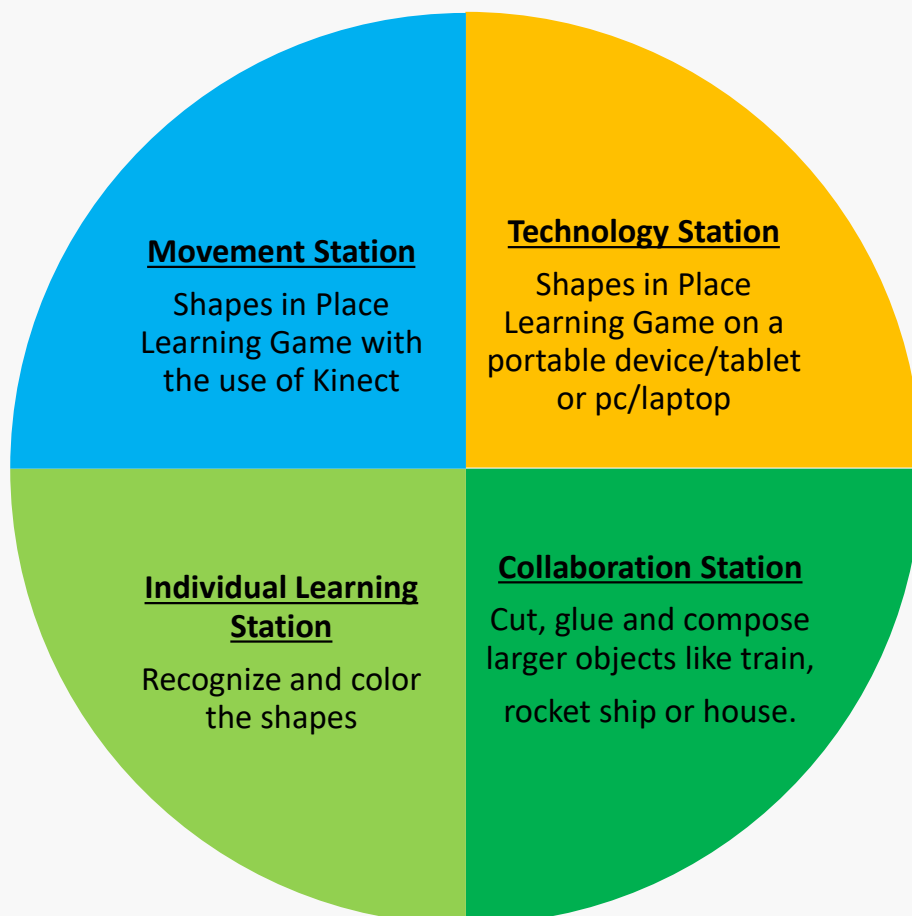
Learning Activity: Compose simple shapes to form larger shapes

Learning Goals

The students will be able to:

- ✓ Recognize and select shapes.
- ✓ Name the shapes used in the game.
- ✓ Compose larger shapes (objects like rocket/house/train) with simple shapes.
- ✓ Coordinate eye-hand movements using gross motor and fine motor skills.

Learning Stations



Equipment & Resources

Movement Station	Kinems platform, Kinect Sensor
Technology Station	Kinems platform, portable device/pc/laptop
Collaboration Station	Kinems Board Game “Shapes in Place”
Individual Learning Station	Shapes in Place printable sheets, pen/marker, if laminated use dry erase markers

Movement Station

Select the learning activity ***Compose simple shapes to form larger shapes*** from the "By goal" library and add the corresponding game: Shapes in Place

In this game the student has to grab and place the simple shapes in the right shadow to create larger shapes, practicing gross motor skills, eye-hand coordination and fine motor skills, using the Kinect.

This colored picture puzzle helps children expand their vocabulary, recognition of shapes and reinforces their ability to categorize and to place different shapes for creating real-world image representations of a boat, a house, a van, a sky-rocket, etc. This strengthens problem solving, concentration, and gross motor skills such as grabbing, middle-line crossing and hand stability. When students attempt to position a shape in its place, it will only fit if it is properly put in the right space.

The game can be made even easier by activating the “help option” meaning that the puzzle piece and the related position, where the piece goes, will be highlighted for few seconds thus guiding the student. A shape can be picked and dragged by a student either with **grab & move interaction** style or with **time-delay selection and movement**. The teacher/therapist can choose the interaction style that is compatible with a student's motor skills level.

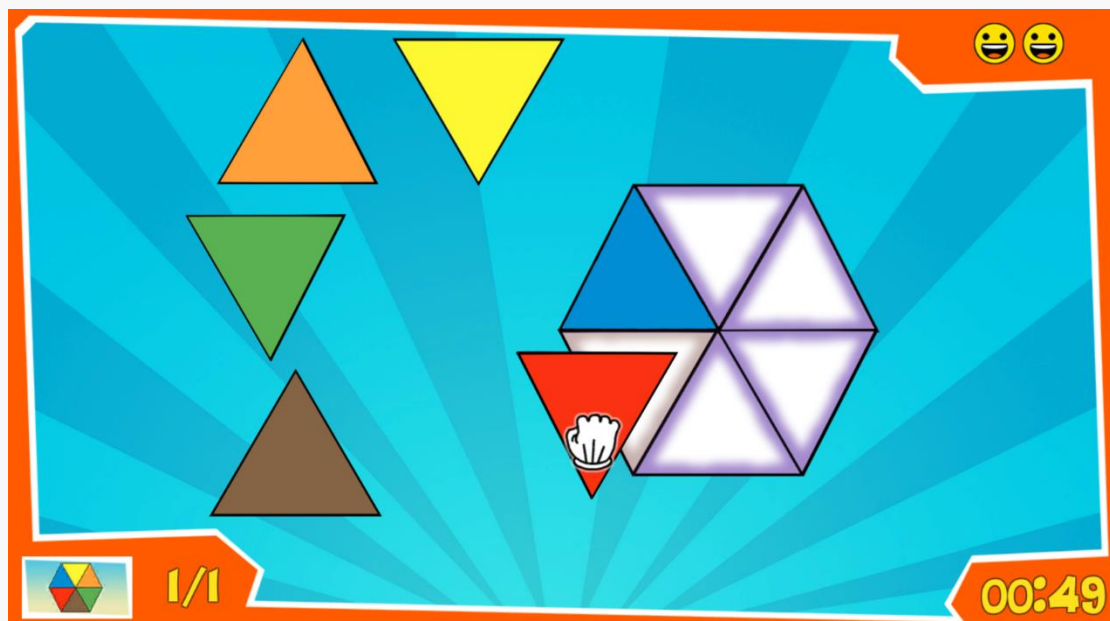
Learning Activities per station

Technology Station

Select the learning activity **Compose simple shapes to form larger shapes** from the "By goal" library and add the corresponding game: **Shapes in Place**

Students practice individually using a portable device/ tablet or computer.

Students are selecting the shapes by tapping on top of them and then dragging them onto the right shape shadow.



Game Settings

- **Music:** Disable/enable background music.
- **Sound effects:** Disable/enable sound effects while selecting an item.
- **Select hand:** The child uses both hands in this game. Help a student in hand movement synchronicity from the sides to the center.
- **Time to select item:** Time to remain stable to select an item. Reduce the time if the child shows arm stability. Options: 0.5 sec, 1 sec, 1.5 sec, 2 secs, 2.5 secs, 3 secs
- **Timer:** Time to finish pairing items. Disable this is if the student feels pressure - Timer value: 1 min, 1.5 mins, 2 mins, 2.5 mins, 3 mins, 3.5 mins, 4 mins, 4.5 mins, 5 mins

- **Interaction mode:** A shape can be picked and dragged either by the child with **grab & move interaction** style or **time-delay selection** and move. The teacher/therapist can choose the interaction style that is compatible with a child's motor skills.
- **Game lives:** Enable or disable game lives depending on the anxiety level of the child.
- **Help:** on/off. It is enabled after a certain period of idle time or after three wrong attempts in a row. The puzzle piece and the related hole, where the piece goes will

Individual Learning Station

Recognize and color the shapes

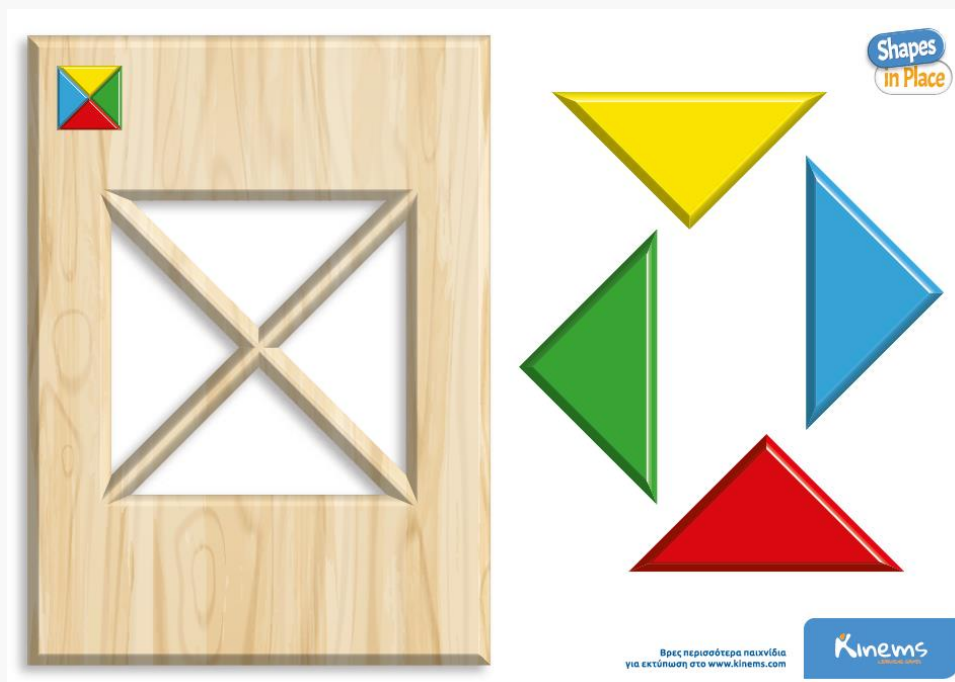
Download the printable of the Shapes in Place game from the Kinems platform. Print and share it to your students. They will have to use their markers to recognize the place of each shape and color them accordingly.

Collaboration Station

Cut, glue and create larger shapes!

Use the "Shapes in Place" Kinems board game. Students have to work in pairs to cut the shapes and glue them in the right place to create larger shapes.

be highlighted for few seconds, thus guiding the child.



Lesson Plan 8

Complete a sequence up to 10

Grade: Kindergarten

Subject: MATH

Unit: Counting

Goal: Know numbers and the count sequence

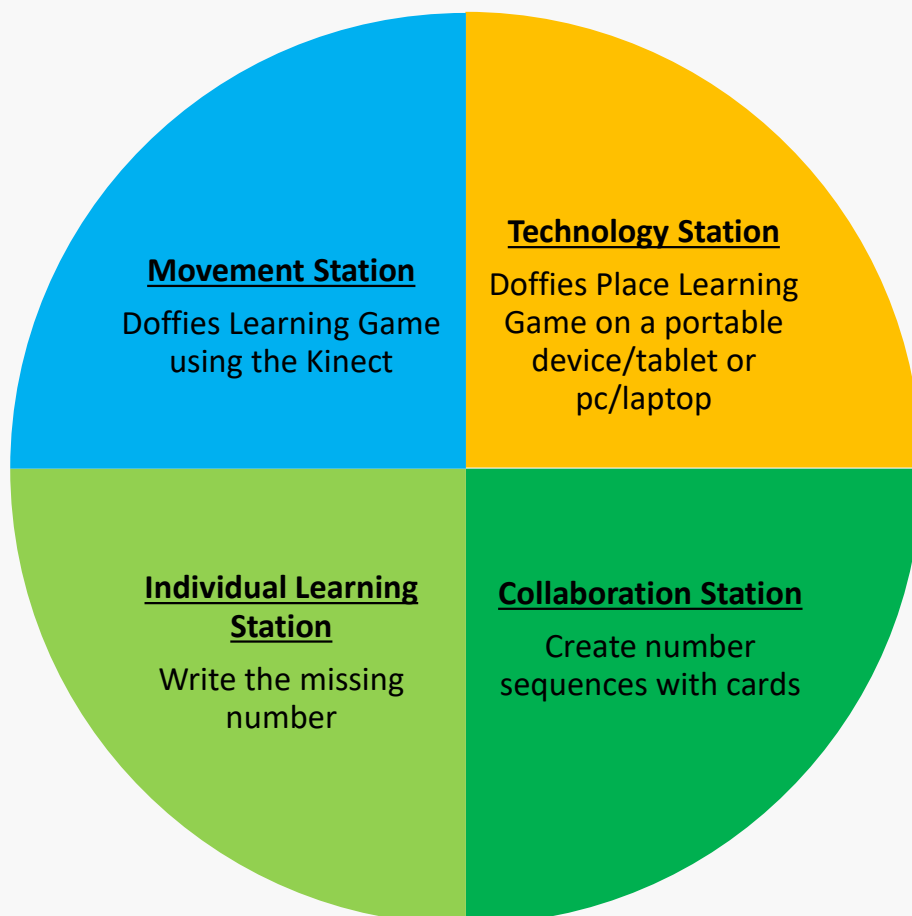
Learning Activity: Complete a sequence up to 10

Learning Goals

The students will be able to:

- ✓ Understand the sequence from 1 to 10
- ✓ Count from 1 to 10 and backwards from 10 to 1
- ✓ Coordinate their eye-hand movements

Learning Stations



Equipment & Resources

Movement Station	Kinems platform, Kinect Sensor
Technology Station	Kinems platform, portable device/tablet/pc/laptop
Collaboration Station	Kinems Board Game “Who’s counting”
Individual Learning Station	Doffies printable pages, pen/marker, if laminated use dry erase markers and eraser or tissues

Movement Station

Select the learning activity ***Complete a sequence up to 10*** from the By Goal Library and add the corresponding game: Doffies

In this game the student has to control the little avatars holding numbers, in order to place them right in the sequence, while practicing gross motor skills, eye-hand coordination and balance standing using the Kinect.

“Doffies” offers an engaging ordering and number sequences game that also promotes motor planning and execution skills. The student must recognize a number sequence and drive a “Doffy” – a blue funny avatar creature created by dough. The Doffy holds a number and walks through a maze in order to line it up next to other Doffies to correctly the sequence of numbers up to 100. In order to drive a Doffy, the student has to make jumping, squat and side walking movements which improve visual motor coordination skills and balance. This game has different levels which can be matched to a child's mathematical ability level and motor skills.

The teacher/therapist can adjust the game by choosing the learning content including the number sequences that can appear in forward and backward order. The teacher can also modify the complexity level of the maze thus promoting the visual perception and motor coordination skills of the student.

Learning Activities per station

Technology Station

Select the learning activity ***Complete a sequence up to 10*** from the "By goal" library and add the corresponding game: Doffies

Students practice individually using a portable device, tablet or computer.

Students are selecting the little avatars by tapping on top of them and then dragging them onto the right empty space in the sequence.



Game Settings

- **Music:** Disable/enable background music.
- **Sound effects:** Disable/enable sound effects while selecting an item.
- **Select hand:** The child uses both hands in this game. Help a student in hand movement synchronicity from the sides to the center.
- **Time to select item:** Time to remain stable to select an item. Reduce the time if the child shows arm stability. Options: 0.5 sec, 1 sec, 1.5 sec, 2 secs, 2.5 secs, 3 secs
- **Timer:** Time to finish pairing items. Disable this is if the student feels pressure - Timer value: 1 min, 1.5 mins, 2 mins, 2.5 mins, 3 mins, 3.5 mins, 4 mins, 4.5 mins, 5 mins
- **Number of questions:** This shows the number of questions/stages for each game. Options: 1 question, 2 questions, 3 questions, 4 questions, 5 questions

- **Path difficulty:** This option sets the complexity of the maze and adds extra difficulty and obstacles in finding the correct path. Options: Easy or Hard.
- **Missing sequence numbers:** This determines the number of possible missing numbers that the student can complete in a number line. Options: 2 numbers, 3 numbers, 4 numbers
- **Content difficulty:** This option makes it harder to select the right answer reinforcing the knowledge of multiples in a number line. Options: Easy, Medium or Hard
- **Reverse number sequence:** This option enables reverse number sequence, adding extra difficulty in completing the number line. On, Off
- **Game lives:** Enable or disable game lives depending on anxiety of student.

Individual Learning Station

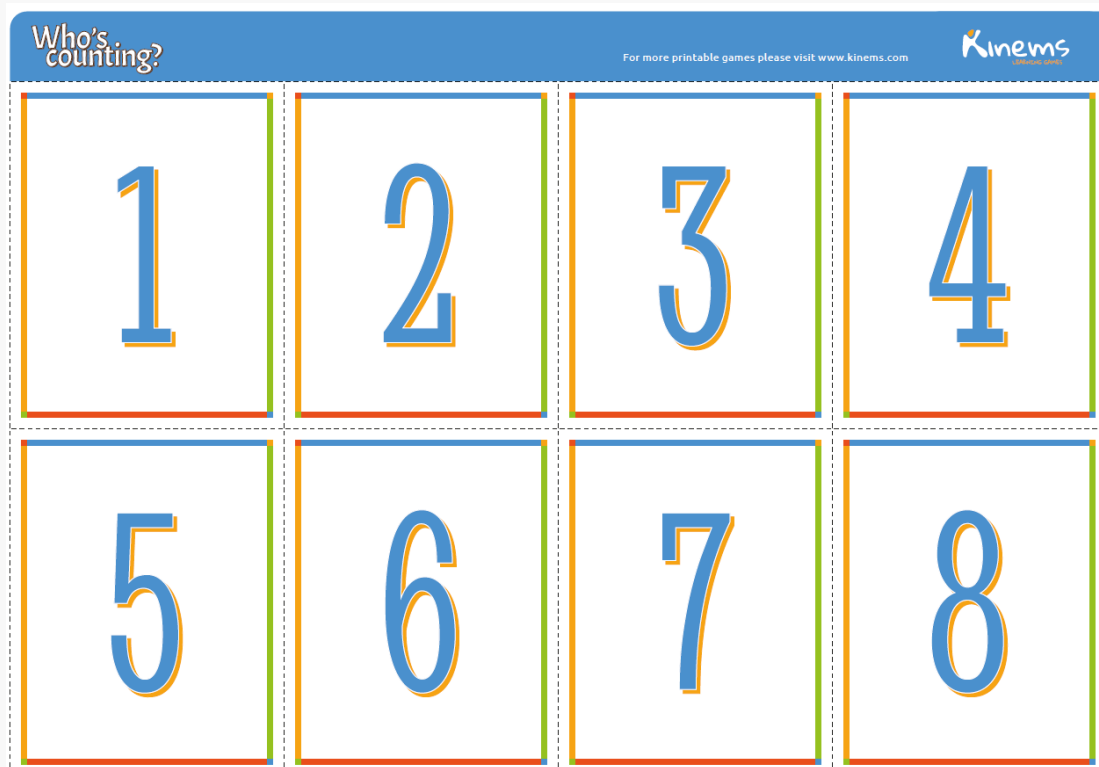
Write the missing number!

Download the printable of the Doffies game from the Kinems platform. Print and share it to your students. They will have to use their markers to recognize and write the numbers in the sequence. If you laminate, use dry erase markers.

Collaboration Station

Create number sequences with cards!

Use the "Who's Counting" Kinems board game. Students have to work in pairs to create number sequences from 1 to 10.



Lesson Plan 9

Add two numbers up to 10

Grade: Kindergarten/First Grade

Subject: MATH

Unit: Addition and Subtraction

Goal: Addition up to 10

Learning Activity: Add two numbers up to 10

Learning Goals

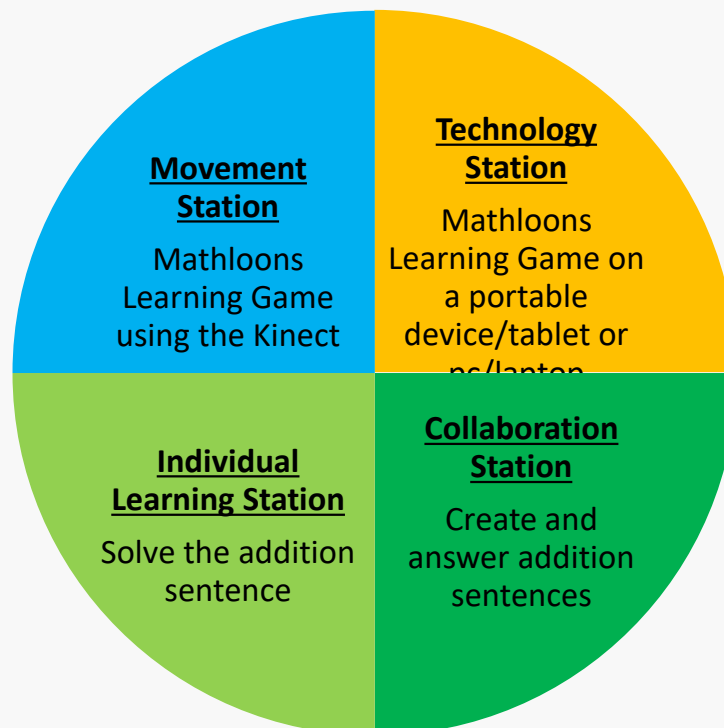
The students will be able to:

- ✓ Add numbers up to 10
- ✓ Coordinate eye-hand movements

Equipment & Resources

Movement Station	Kinems platform, Kinect Sensor
Technology Station	Kinems platform, portable device/ tablet/pc/laptop
Collaboration Station	Kinems Board Game “Math Operations”
Individual Learning Station	Mathloons printable pages, pen/marker and if laminated use dry erase markers

Learning Stations



Learning Activities per station

Movement Station

Select the learning activity **Add two numbers up to 10** from the "By goal" library and add the corresponding game: Mathloons.

Students must identify the right balloon that represents the correct answer to a math calculation problem while keeping their hands steady for few seconds so that the balloon pumps up and to moves to the correct spot for the result. Feedback is given for the correct or wrong answers.

One of the most basic and important foundational skills in mathematics is the ability to perform mental calculations. "Mathloons" is a game that helps students to practice addition in a fun and engaging way. They are also concurrently improving middle-line crossing skills.

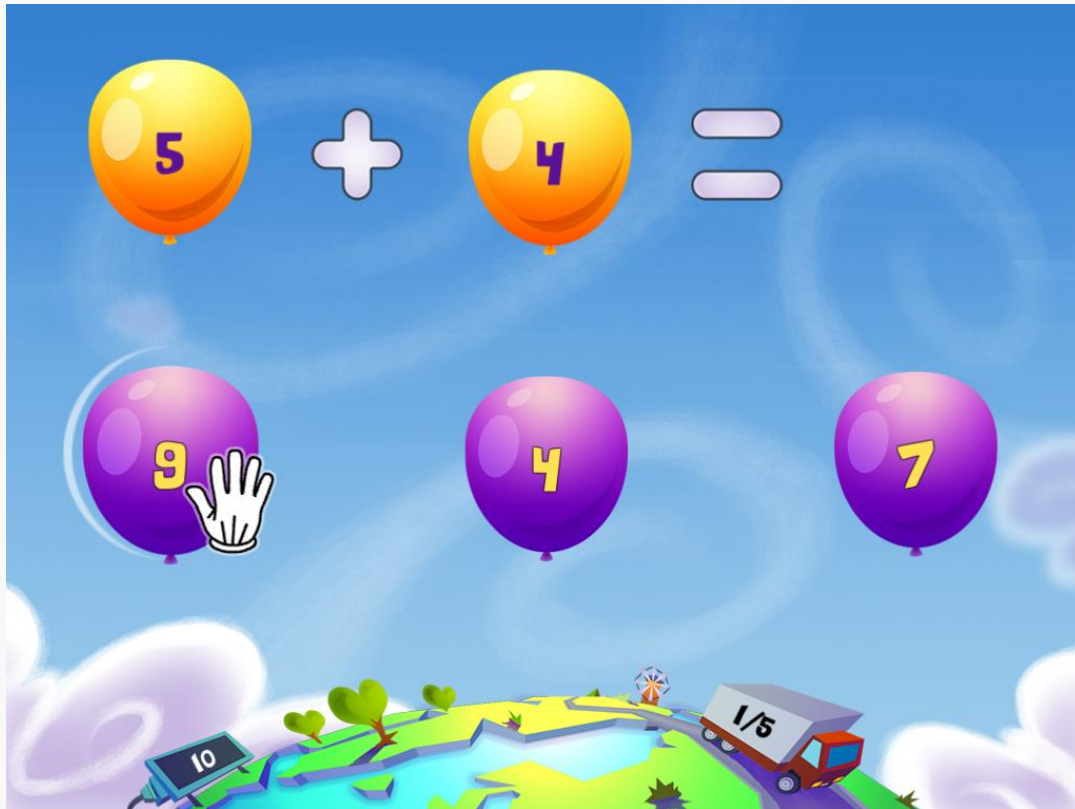
The teacher/therapist can choose the level of difficulty for the math calculations that the student will be asked to perform, thus offering math problems related to simple or more complex math strategies according to their individual level. Also, the teacher/therapist can choose the range of the numbers that will appear and the complexity of the equations to be solved.

Technology Station

Select the learning activity **Add two numbers up to 10** from the "By goal" library and add the corresponding game: Mathloons.

Students practice individually using a portable device/tablet or computer.

Students select the correct by tapping the balloons with the correct corresponding number to solve the equation.



Game Settings

- **Music:** Disable/enable background music.
- **Sound effects:** Disable/enable sound effects while selecting an item.
- **Select hand:** The child uses both hands in this game. Help a student in hand movement synchronicity from the sides to the center.
- **Time to select item:** Time to remain stable to select an item. Reduce the time if the child shows arm stability and concept development. Options: 0.5 sec, 1 sec, 1.5 sec, 2 secs, 2.5 secs, 3 secs.
- **Timer:** Time to finish pairing items. Disable this is if the student feels pressure - Timer value: 1 min, 1.5 mins, 2 mins, 2.5 mins, 3 mins, 3.5 mins, 4 mins, 4.5 mins, 5 mins.
- **Equality sign:** Move the equal sign to the left or right of the question. Options: On the left/on the right.
- **Quantity:** This option shows the numbers in quantities facilitating the operation of addition. Options: On/Off.
- **Number of questions:** This shows the number of questions/stages for each game. Options: 5 question, 10 questions, 15 questions, 20 questions.

- **Game lives:** Enable or disable game lives.

Individual Learning Station

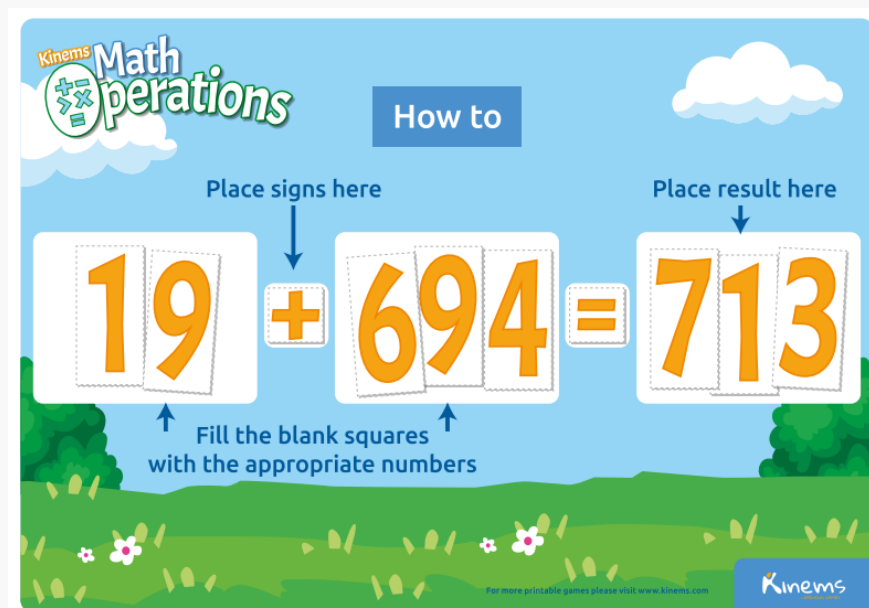
Write the result of the addition sentence!

Download the printable of the Mathloons game from the Kinems platform. Print and share it to your students. They will have to use their markers or pencils to circle the balloon with the correct answer and write in the addition sentence. Use laminated pages and a dry erase marker to reuse the resources.

Collaboration Station

Create and answer addition sentences!

Use the "Math Operations" Kinems board game. Students have to work in pairs to prepare the cut outs, create and answer addition sentences up to 10. Students can work together to quiz each other or prepare equations for other pairs of students.



Lesson Plan 10

Compare by counting (more)

Grade: Kindergarten

Subject: MATH

Unit: Counting

Goal: Compare by counting using objects

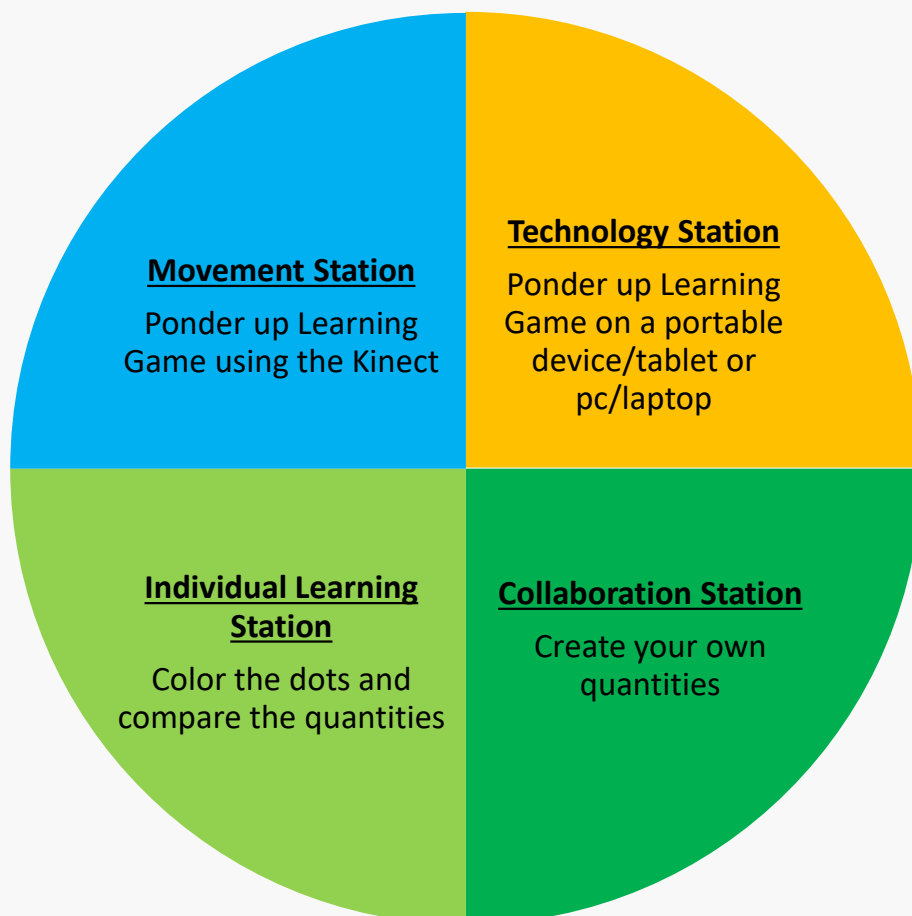
Learning Activity: Compare by counting (more)

Learning Goals

The students will be able to:

- ✓ Count from 1 to 10
- ✓ Compare quantities
- ✓ Distinguish and choose the group of objects which are more than another
- ✓ Coordinate eye-hand movements
- ✓ Jump and stand back on two feet

Learning Stations



Equipment & Resources

Movement Station	Kinems platform, Kinect Sensor
Technology Station	Kinems platform, portable device/pc/laptop
Collaboration Station	Kinems Board Game "Ponder up"
Individual Learning Station	Ponder up printable resource sheets, pen/marker, or laminated sheets with dry erase marker

Movement Station

Select the learning activity ***Compare by counting (more)*** from the "By goal" library and add the corresponding game: Ponder up

The student becomes a little frog avatar in a lake that makes side movements in an effort to choose the correct answer for a given question. The student sees two bubbles at the top of the screen that contain quantities that need to be compared.

By moving their own body, they move the little frog left or right. Once they stand under the bubble with the correct answer, they must jump in order to break the bubble. The message "Find the greater" provides instructions to the student to make movements according to the task.

Learning Activities per station

Technology Station

Select the learning activity *Compare by counting (more)* from the "By goal" library and add the corresponding game: Ponder up

Students practice individually using a portable device/tablet or computer.

Students are selecting the right answer by tapping/clicking on the corresponding bubble. Then the little frog jumps and pops the bubble.



Game Settings

- **Music:** Disable/enable background music.
- **Sound effects:** Disable/enable sound effects while selecting an item.
- **Select hand:** The child uses both hands in this game. Help a student in hand movement synchronicity from the sides to the center.
- **Time to select item:** Time to remain stable to select an item. Reduce the time if the child shows arm stability and concept mastery. Options: 0.5 sec, 1 sec, 1.5 sec, 2 secs, 2.5 secs, 3 secs
- **Timer:** Time to finish pairing items. Disable this is if the student feels pressure - Timer value: 1 min, 1.5 mins, 2 mins, 2.5 mins, 3 mins, 3.5 mins, 4 mins, 4.5 mins, 5 mins

- **Interaction Mode:** Interaction mode allows teachers to select the action that students should practice on. It can be **“Jump”** when students jump in order to select the right answer. On the other hand, **“Time Delay”** allows students to select the right answer without jumping.
- **Number of questions:** This shows the number of questions/stages for each game. Options: 5 question, 10 questions, 15 questions, 20 questions.
- **Audio message:** Enable or disable game the audio message.
- **Game type:** This option makes it harder to select the right answer as there are smaller difference between quantities and/or numbers or reversed numbers. Options: Easy or Hard.
- **Game lives:** Enable or disable game lives depending on student anxiety level.

Individual Learning Station

Color the dots and compare the quantities!

Download the printable of the Ponder up game from the Kinems platform. Print and share it to your students. They will have to use their markers to color as many dots as the written number on the box and then circle the bubble with the greater number. Laminate the sheets and use dry erase markers to reuse again and again.

Collaboration Station

Create your own quantities!

Use the "Ponder up" Kinems board game. Students have to work in pairs to create their own quantities. Once ready, they exchange their board with another team that must select the greater by placing the little frog cut out on top of the right bubble. The pair that completes the board correctly, wins.

