**STEAM in Physical Education
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**Episode #1:  Zookeeper tag game.**

**Equipment: Hula-Hoops, tagging devices or flash lights**

**Goodnight Gorilla:  Read the book or show the video:**

<https://www.youtube.com/watch?v=1Kl8S61bCn4>

The hula hoops are spread around the playing area and represent the animal cages. Choose players to be taggers, the zoo keepers. You can give them a “flashlight” or tagging device to hold.  The zookeepers’ job is to tag the animals. When an animal is tagged, they must return to their cage (a hula hoop). To get out of the cage, two students work together to free others. They must work together to lift up the hoop.

**Episode #2: Pathways of animals:**

**Equipment: Animal cards, hula-hoops, poly spots**

Have hula hoops spread over the gym with different animal cards in the hula-hoops (etc. Eagle, Frog, horse, fish, etc). Have poly spots (or lines) making pathways connecting the hoops.  They students will move from hoop (Habitats) to Hoop like that animal.

 **Letter Recognition & Spatial Engineering**

**Equipment:**

Poly Spot Letters

Letter dice or spinners

Letter spinner physical <https://wheeldecide.com/wheels/board-games/scattegories-spinner/>

Letter spinner virtual <https://wheeldecide.com/wheels/board-games/scattegories-spinner/>

Letter images

Letter labels for cones

26 cones

Hula hoops

**Talk to the kids about:** Letters make words! Letters are shapes! Some letters are curvy, some letters are straight, some letters have both! How can we make letters with our bodies?

Students are moving around doing different locomotor movements.  Galloping, skipping, jumping, etc. The music is playing, when the music stops, the students freeze in letter shape called out by instructor.  They can make the letter with their entire body or fingers.

*Cues:* It’s ok to be inspired by other people’s shapes

Your letter shapes do not need to look exactly the same

 There is no wrong answer - do your personal best!

**Warm-Up:**  Have letters spread all over the floor.   Students will move around using different locomotor patterns (galloping, running, skipping, sliding, hopping, jumping)  When the music stops, they will go to a letter and try and make that letter with their body (no partners).

**Cues:**

* Look at curves and lines on the letter
* Use different sizes to create letter
* Use different body parts to create letter

**Spin and Touch:**

**Equipment: Poly spots, spinner, alphabet poly spots**

Each student will have a poly spot with a dice or spinner on it with all the letters on it.  They will roll the dice/spin and then have to run to the letter that is on the ground that matches the letter they just rolled/spin.  How many different letters can they touch.

**Spin, Touch, and Go**

**Equipment: Spinners and exercise cards, Alphabet letters**

Spinners are placed around center circle. Alphabet is sequenced around perimeter of gym. Students will spin and then run to the letter and do the exercise that is at the cone.  Example: A= 10 Mountain climbers, B= Ski jumps, etc.

**Letter Sort**

**Equipment: Small letter, Signs or the alphabet, buckets to hold the letters**

Small letters are scattered on the floor. The alphabet is laid out along the perimeter of the gym with small buckets alongside each letter. The students are asked to sort the letters into the corresponding letter bucket.

**Picture Sort:**

**Equipment: Pictures, alphabet letters**

Have pictures spread all over the gym floor.  Have the alphabet on the outside of the gymnasium.  The students will pick up the picture and figure out what is the first letter it starts with.  They will sort the letter into the corresponding letter.

**Spin and Dribble:**

Equipment: Spinners, letters, and manipulatives

Have each student start at a letter with an manipulative.  Have them spin the spinner and dribble to the letter that they spun.  Once they get there, spin and dribble to the next letter.

**Directional Terminology and Event Sequencing**

**Rosie’s Walk by Pat Hutchins:**

Focus is on directional terms/prepositions: Across, around, over, past, though, and under.

Students are expected to go through events in story and repeat the journey that Rosie takes

Set up the gymnasium withobstacles for students to go over, under, around and/or through (Example: Hoops on stands, half donut, cones with rods across, noodle arcs, mats, etc).  Read *Rosie’s Walk* with class in a circle - discuss how the Fox is managing the obstacles

Have students (walk, gallop, walk backwards, run, etc.) through obstacles, pausing when music stops.

**Rosie’s Walk:** <https://video.search.yahoo.com/yhs/search?fr=yhs-iba-1&hsimp=yhs-1&hspart=iba&p=Rosie%27s+walk#id=4&vid=282d3d137c52c909ee09cb3cd35c725b&action=click>

Watch *Rosie’s Walk* on video - Prior to watching Rosie’s walk, ask questions regarding sequencing and directions that Rosie took.  What did she do first? Then what did she do? Etc.

Students move through obstacles again at own exploration with various locomotor skills

Extension:  Can they move through the different obstacles with different manipulatives?  Have students strike bean bag with foot: going over, under, around and/or through obstacles.  Have students strike big/small deck rings with foot: - going over, under, around and/or through obstacles.  Have students strike ball with foot - going only around obstacles.

Implementation #2 - Human Obstacle Course (S leads) - working creatively with a pair, demonstrating safety in a group activity -- assign each student to create an obstacle with a partner - Pair is assigned one of the four concepts (over, under, around, through) -- help create a linear obstacle course of half of the pairs - half walks/runs/freestyle the course, then exchange and other half walks/runs/freestyle the course

 **Color Recognition & Spatial Engineering with spinners:**

**Equipment:**

4 Colored cones: Blue, Green, Yellow, Red

Spinners with 5 colors and matches the cones you choose (or dice or virtual spinner)

Spinner with 12 colors for Brain Flakes

Colored poly spots

Spinners for students

**Warm-Up:**   **4 Colored Cones (from Mike Graham)**

 Equipment: 4 colored cones.  Small cones to mark off and inside track, and a spinner.

Have four cones in each corner of the gym.   Then have an inside track inside those cones.

To match the spinner example: Blue, green, orange, red). The kids will do locomotor skills around the gym. Once the music stops, they have to go to the closest corner.  If the teacher spins the spinner (or rolls the dice), and it lands on your color, you have to come to the middle and have to do the locomotor skill.  The only way to get out is for it to land on the extra color. Teachers are “Foxes”

**Chicken Feed**

**Equipment: colored bean bags, hula hoop, tagging devices, buckets, cones for a Vet’s office**

Rosie is home for dinner, but the sly fox got into her feed! We need the farmers to help organize all of the feed into the troughs for all of the farm animals. BE CAREFUL of those sly foxes! If you get tagged, you need to drop your food and go to the Vet’s office (doctors) to get healthy again. The way we get healthy is by jumping over the line 5 times. (Extension - mountain climbers, burpees, tuck jumps)

 **Color Touch**

**Equipment: Spinners, colored poly spots**

Have colored poly spots spread out across the floor.  Students will spin their spinner and have to run and touch the color that they spun.  How many colors can they touch? Have them touch the dot with different body parts.

**Spin for Brain Flakes**

**Equipment: Brain Flakes**

Have the Brain Flakes in little buckets around the center of the gym.  Put the brain flake in the buckets for the kids to grab. The students will run to the middle and grab two brain flakes and bring it back to their hula-hoop.  They will build whatever they want with the Brain Flakes.

**(E) Building on to their houses**

**Equipment: Colored spinners and Brain Flakes**

Add on to building of their houses.  This time they can add on when they spin the spinner and then they are able to grab that color to their house.  This time they have to spin to collect their color. They have a 1 in 10 chance of getting the color they want.

(Extension):  Use Brain Flakes to design prototypes - discuss the method for building a prototype. How can this skill be applied in other areas?

**Button factory shapes and color (Kristan Tiede)**

**Equipment: Buttons, hula hoops, buckets, poly spots to make safety line, hula hoops, tagging devices**

Have button shapes at one end of the gymnasium.  Have a safe line so when they are picking up the buttons, they can’t get tagged by the taggers that come later.    Have them pick up a button and run to the opposite side of the gym and sort the buttons into the correct shape bucket/hula hoop.  Have a safe line by the buckets, so when they are putting them in the bucket, they can’t get tagged. Then they run back and pick up another button.  If they get tired, they can take a break in one of the two hula hoops that are on the sideline of the gym. Then run back and get another button.

(E) Add taggers in. If tagged, Go to the hoop that is on the floor and someone has to give you a high 5 or 10 to get you out.

**Patterns and Basic Addition:**

**Noodle Color Cards:  Patterns**

**Equipment: Noodle slices and pattern cards**

Have each student have a noodle card to start off with.  They will run to the center and take two at a time and bring it back to their spot.  Then they will run back and get the rest to finish the pattern.

(Extension) Can they add on to the pattern?  Example: Red, Blue, Red, Blue…….What comes next. (Red, Blue)

**Here’s how they meet SHAPE Standards, And Math standards**

[CCSS.MATH.PRACTICE.MP7](http://www.corestandards.org/Math/Practice/MP7/) Look for and make use of structure.

Mathematically proficient students look closely to discern a pattern or structure.

Classify objects and count the number of objects in each category.

[CCSS.MATH.CONTENT.K.MD.B.3](http://www.corestandards.org/Math/Content/K/MD/B/3/)

Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Identify and describe shapes.
CCSS.MATH.CONTENT.K.G.A.1
Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.
CCSS.MATH.CONTENT.K.G.A.2
Correctly name shapes regardless of their orientations or overall size.
CCSS.MATH.CONTENT.K.G.A.3
Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").
Analyze, compare, create, and compose shapes.
CCSS.MATH.CONTENT.K.G.B.4
Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).
CCSS.MATH.CONTENT.K.G.B.5
Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
CCSS.MATH.CONTENT.K.G.B.6
Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"

Literacy Standards: [CCSS.ELA-LITERACY.W.K.3](http://www.corestandards.org/ELA-Literacy/W/K/3/)

Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened

[CCSS.ELA-LITERACY.W.K.8](http://www.corestandards.org/ELA-Literacy/W/K/8/)

With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

**SHAPE STANDARDS:**

**Standard 1.Demonstrates competency in a variety of motor skills and movement patterns.**

**Standard 2.Applies knowledge of concepts, principles, strategies and tactics related to movement and performance.**

**Standard 3.Demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.**

**Standard 4. Exhibits responsible personal and social behavior that respects self and others.**