

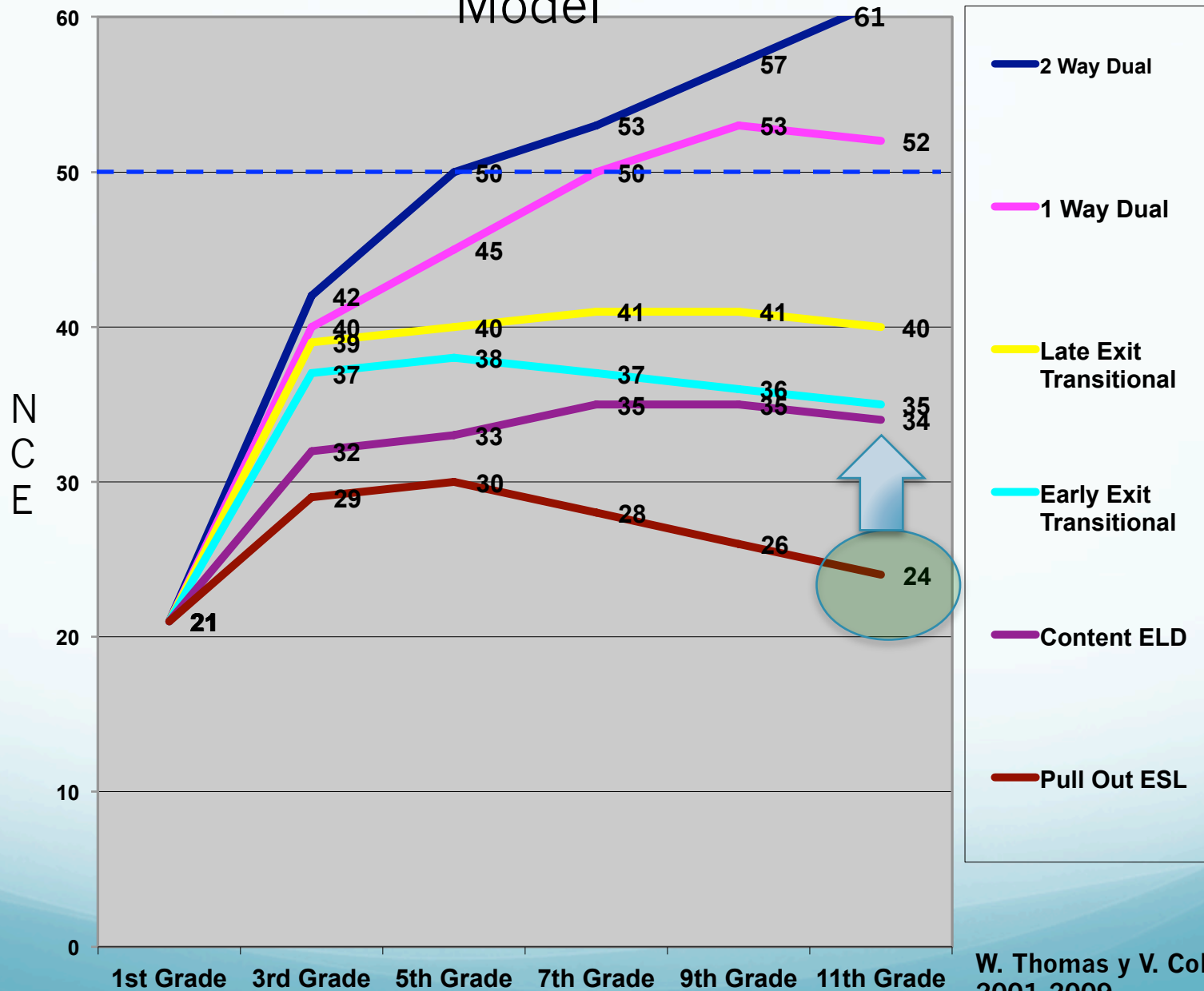
Promoting Academic Language Development through Science Content-based ELD in the K-2 Classroom

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Outcomes

- Examine the rationale for content-based ELD
- Explain our process
- Show example lessons from our first year
- Hear teacher and principal testimonials
- Explore the materials
- Q & A

English Learners' Long-Term Achievement by Program Model



W. Thomas y V. Collier,
2001-2009

Why Content-based ELD?

- Reinforces what students are learning in their core classes while focusing on systematic language development at the same time
- More meaningful, purposeful and authentic
- Promotes rigorous academic language development
- Necessitates collaboration between classroom teachers and specialists

How did we do it?

- Found out what was the most common order of implementation for the science units
- Used the ELP standards and the MESD scope and sequence to assign functions to each unit
- Designed weekly lessons within the units that included the content objectives and increased in linguistic complexity
- Used a daily lesson framework that included an Opening, I Do, We Do, You Do and Closing
- Attempted to include all grammatical forms over the course of the year



Example of Increasing Complexity from Balls and Ramps Week 1



Which ball is bouncing higher ?
higher
lower



The basketball is bouncing higher **than** the baseball.
type of ball higher lower other type of ball

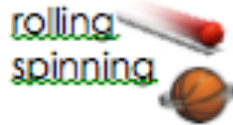


Function:
Describing and Comparing

Form:
Comparative Adverbs and
Present Progressive



Which ball is rolling slower ?



faster
slower



The yellow tennis ball is rolling slower than the rubber kickball.

adjective

type of ball

rolling

spinning

faster

quicker

slower

adjective

type of ball

A...



rolling



spinning

Function:

Describing and Comparing

Form:

Adjectives

Comparative Adverbs

Present Progressive Verbs

Has the rubber kickball ever spun quicker than any other ball?

adjective

type of ball

moved

rolled

bounced

spun

faster

quicker

slower

higher

lower

Yes, the rubber kickball has spun quicker than the large basketball.

adjective

type of ball

moved

rolled

bounced

spun

faster

quicker

slower

higher

lower

adjective

type of ball

A...



moved



rolled



Function:

Describing and Comparing

Form:

Adjectives

Present Perfect Verbs

Comparative Adverbs

Has the hard golf ball ever bounced higher than the colorful beach ball?

adjective type of ball moved rolled bounced spun faster quicker slower higher lower adjective ball

No, the hard golf ball hasn't ever bounced higher than the colorful beach ball.

adjective ball moved rolled bounced spun faster quicker slower higher lower adjective ball

A...



moved



rolled



bounced



spun

Function:

Describing and Comparing

Form:

Adjectives
Negative Present Perfect Verbs
Comparative Adverbs

Has the smooth ping pong ball **ever** rolled slower than the leather football ?

adjective type of ball moved faster adjective ball
 rolled quicker
 bounced slower
 spun higher
 lower

No, **The** smooth ping pong ball **hasn't** rolled slower than the leather football.

Yes adjective ball has moved faster
 No hasn't rolled quicker
 bounced slower
 spun higher
 lower

A...



moved



rolled



bounced

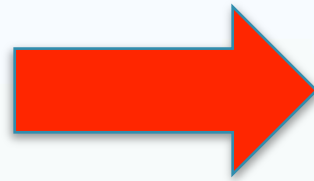
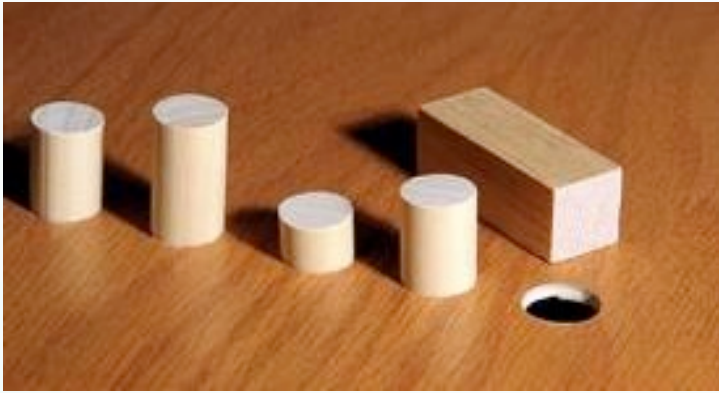


spun

Function:
Describing and Comparing

Form:
Adjectives
Positive and Negative Present Perfect Verbs
Comparative Adverbs

What was the process like?







grass



CBELD Science Units

Gr K :

Trees

 Solids & Liquids

Animals 2x2

Gr 1 :

Pebbles, Sand & Silt

Balls & Ramps

Insects

Gr 2 :

Weather

Balance & Motion

Habitats

Each unit is from 5-9 weeks long

Week	Topic	Functions
Week 1	Observing, Describing and Classifying Solids by Color and Shape	Explaining, Describing, Comparing and Contrasting
Week 2	Comparing Solids that Roll and Stack	Describing, Comparing and Contrasting, Making Predictions
Week 3	Comparing Solids that Sink/Float and are/aren't Attracted to a Magnet	Describing Action, Comparing and Contrasting
Week 4	Observations about Properties	Classifying, Comparing and Contrasting
Week 5	Observing Liquids	Giving and Following Directions, Comparing
Week 6	Investigating Liquids/Flowing Liquids	Describing. Comparing and Contrasting, Cause and Effect
Week 7	Liquid Drop Races	Comparing and Contrasting, Making Predictions, Cause and Effect
Week 8	Mixing Liquids/ New Liquids	Describing. Comparing and Contrasting. Making Predictions
Week 9	Comparing Solids and Liquids/ Unit Assessment	All Previous

Solids and Liquids: Week 1 Lesson 4

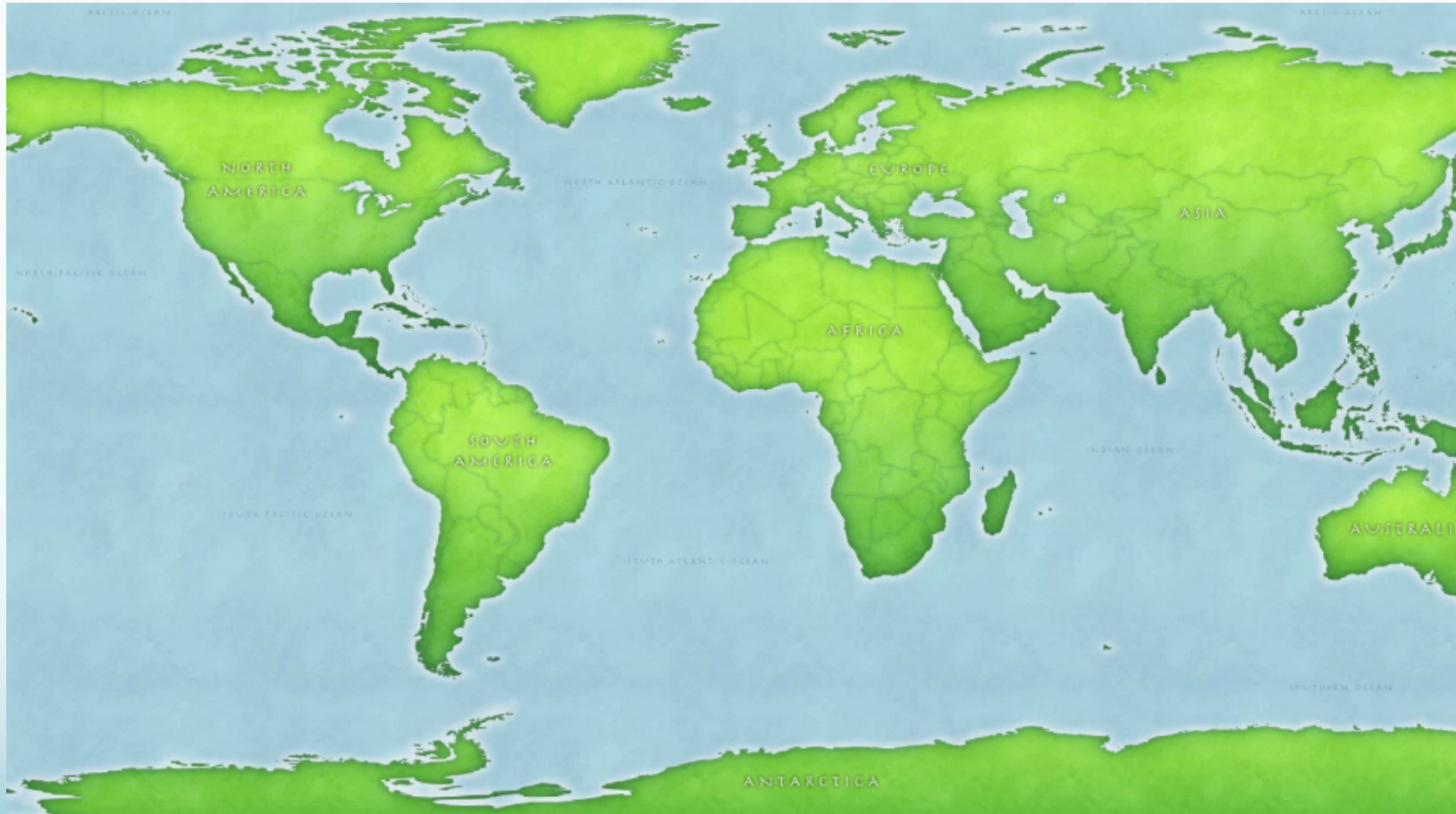
- Language Objective:

We will use *shape words* in order **to classify** solids.

- Content Objective:

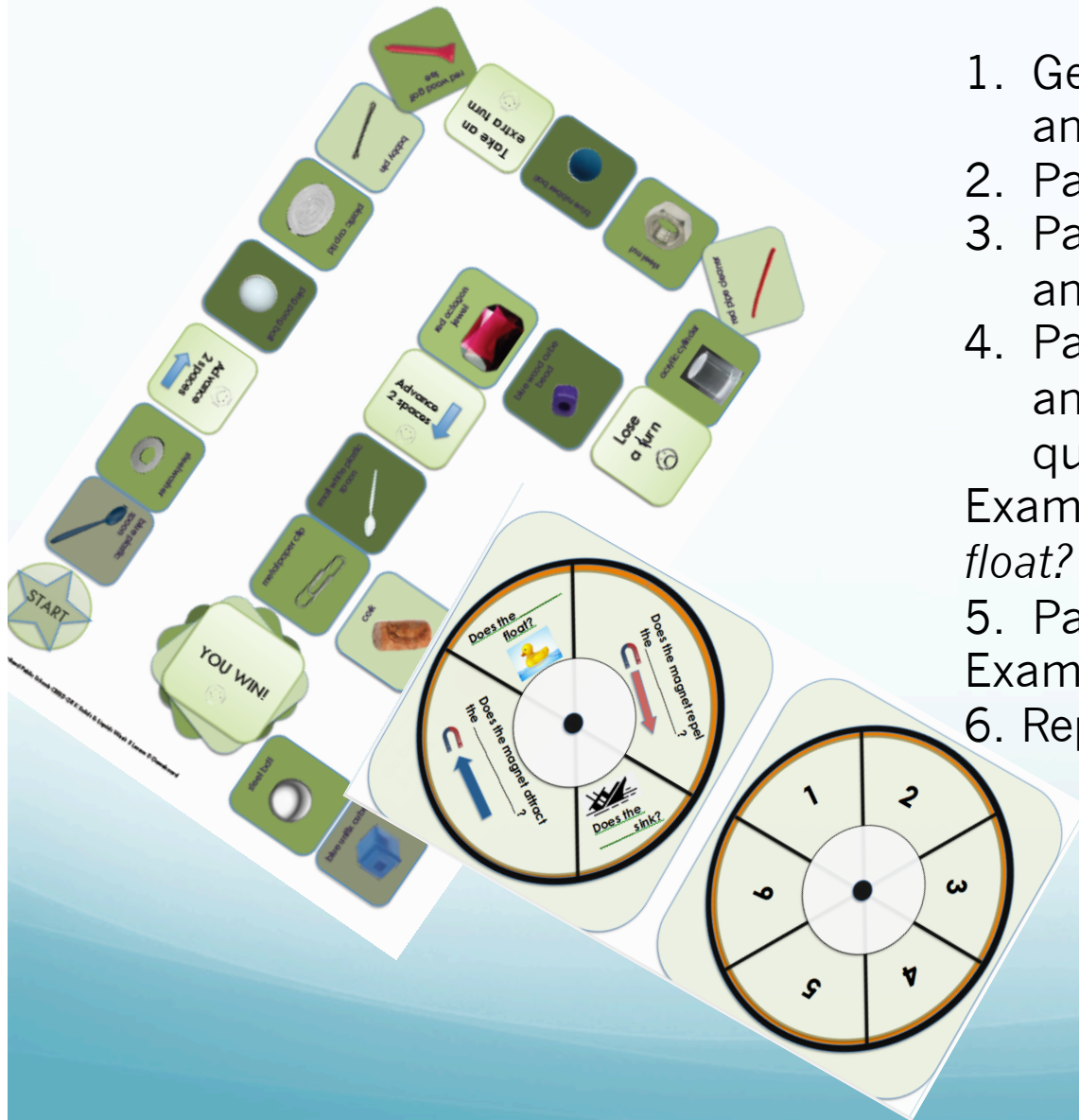
We will sort solids on the basis of the property of color.

Solids and Liquids Lesson



Week	Topic	Functions
Week 1	Observing, Describing and Classifying Solids by Color and Shape	Explaining, Describing, Comparing and Contrasting
Week 2	Comparing Solids that Roll and Stack	Describing, Comparing and Contrasting, Making Predictions
Week 3	Comparing Solids that Sink/Float and are/aren't Attracted to a Magnet	Describing Action, Comparing and Contrasting
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Your Turn: Solids and Liquids Game



1. Get with a partner. Choose an A and B.
2. Pair up with another diad.
3. Partner A: Spin the number spinner and move your game piece.
4. Partner B: Spin the other spinner and ask the corresponding question.

Example: *Does the blue unifix cube float?*

5. Partner A : Try it out and Answer.
Example: *Yes, it does.*
6. Repeat with the other partners.

- <https://www.google.com/search?q=google+timer&ie=utf-8&oe=utf-8&aq=t&rls=org.mozilla:en-US:official&client=firefox-a&channel=fflb>

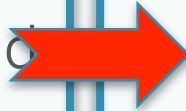
CBELD Science Units

Gr K :

Trees

Solids & Liquids

Animals 2x2



Gr 1 :

Pebbles, Sand & Silt

Balls & Ramps

Insects

Gr 2 :

Weather

Balance & Motion

Habitats

Each unit is from 5-9 weeks long

Week	Topic	Function
Week 1	Comparing Balls	Comparing and Contrasting
Week 2	Moving Balls Depending on Their Size and Weight	Summarizing
Week 3	Comparing Bounciness	Expressing Cause and Effect
Week 4	Roundness of Balls and How it Effects Rolling	Evaluating and Interpreting
Week 5	How Balls Behave on Ramps Based on the Height of the Ramp	Evaluating and Interpreting
Week 6	How Balls Behave on an Incline Based on the Weight of the Ball	Predicting, Comparing and Contrasting, and Drawing Conclusions,

Balls and Ramps: Week 1, Lesson 2

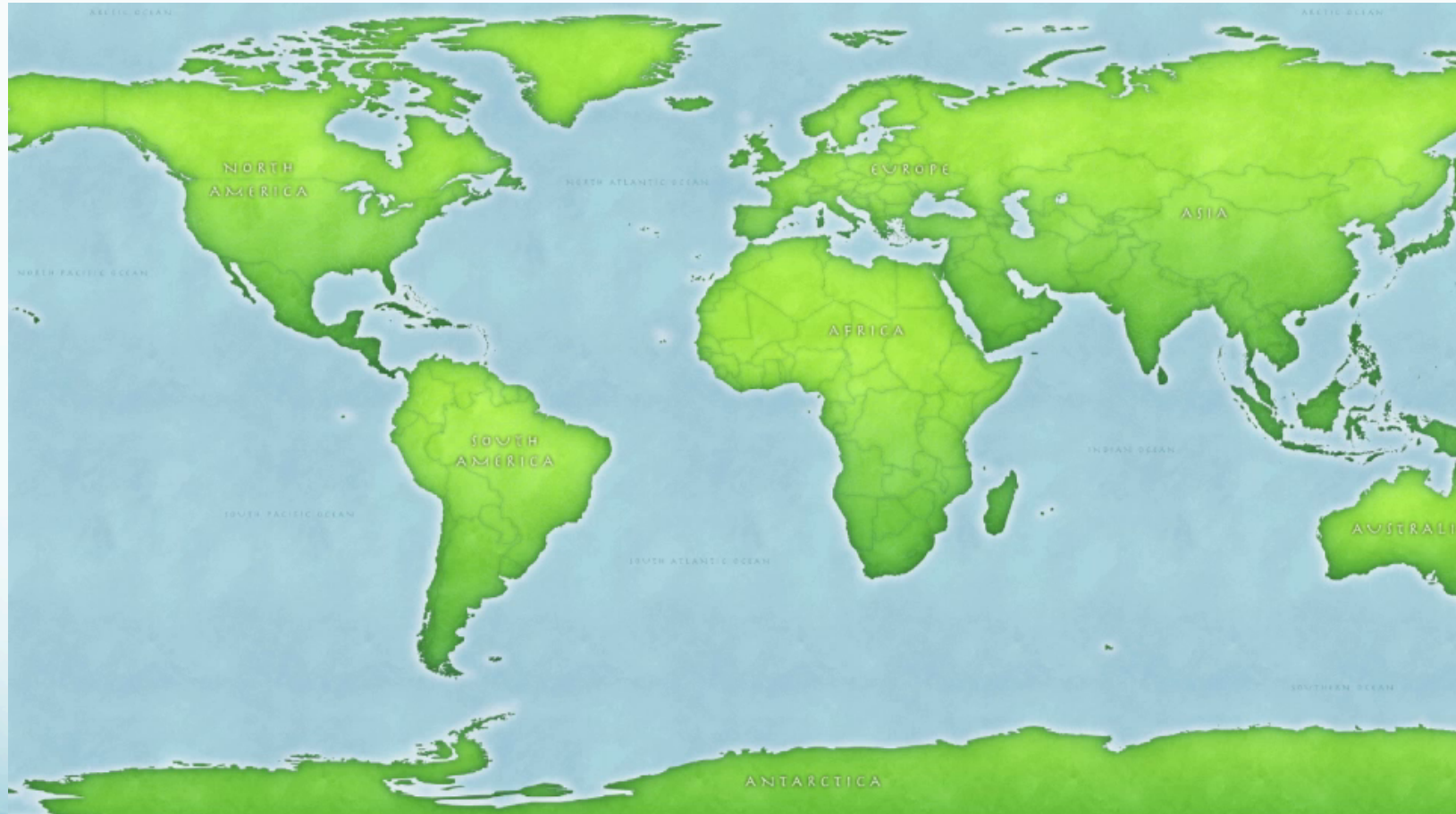
- Language Objective

We will use comparative adverbs and adjectives in order to compare the rolling and spinning of different balls

- Content Objective:

We will describe the motion of an object when force is applied.

Balls and Ramps Lesson



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Balance & Motion

Habitats

Each unit is from 5-9 weeks long

Week	Topic	Functions
Week 1	Balancing Tag Board Shapes Using Counterweights	Comparing & Contrasting, Retelling, and Describing
Week 2	Balancing a Pencil on its Tip Using Wire	Retelling Past Events, Sequencing
Week 3	Making Mobiles to Confirm Concepts of Balance, Counterbalance and Stability	Retelling Past Events, Sequencing, Giving Instructions
Week 4	Spinning Tops and Force	Summarizing, Cause and Effect
Week 5	Zoomers: Tension and Release for Rotational Force	Giving Instructions, Cause and Effect, Sequencing, Comparing & Contrasting
Week 6	Wheel and Axle Systems	Hypothesizing, Comparing and Contrasting, Evaluating
Week 7	Rolling Cups: The Effect of Shape and Weight on a Rolling Object	Making Predictions & Evaluating
Week 8	Rolling Marbles on Runways to Experiment with Slope and Velocity	Predicting, Defining, Describing, Hypothesizing

Balance and Motion: Week 1, Lesson 3

- Language Objective

We will use past tense verbs, prepositions and complex sentences in order to describe how to balance a tagboard crawfish.

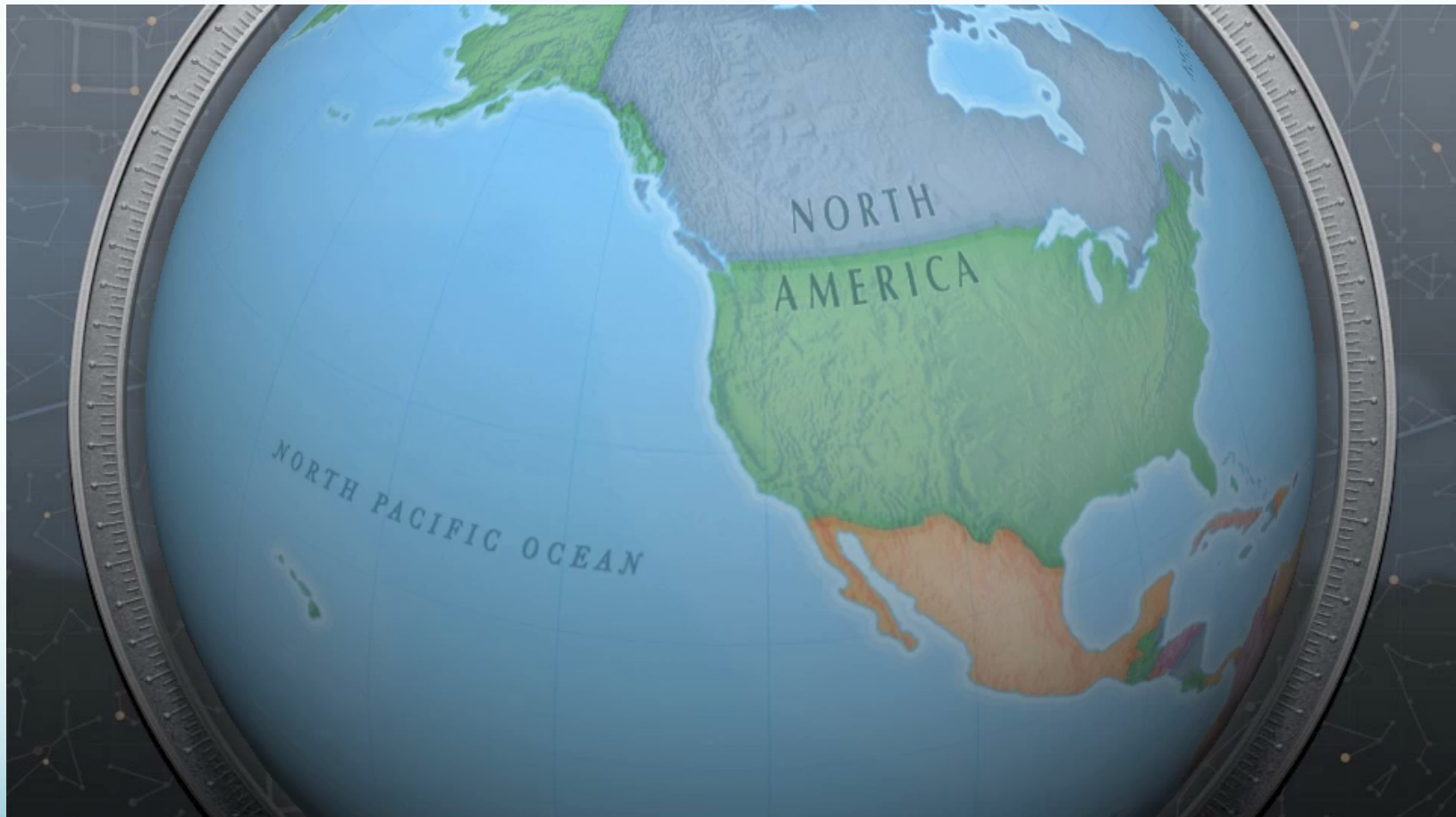
- Content Objective:

We will explain how counterweights can help balance an an object.

Balance and Motion Lesson



Let's hear from some teachers and a principal

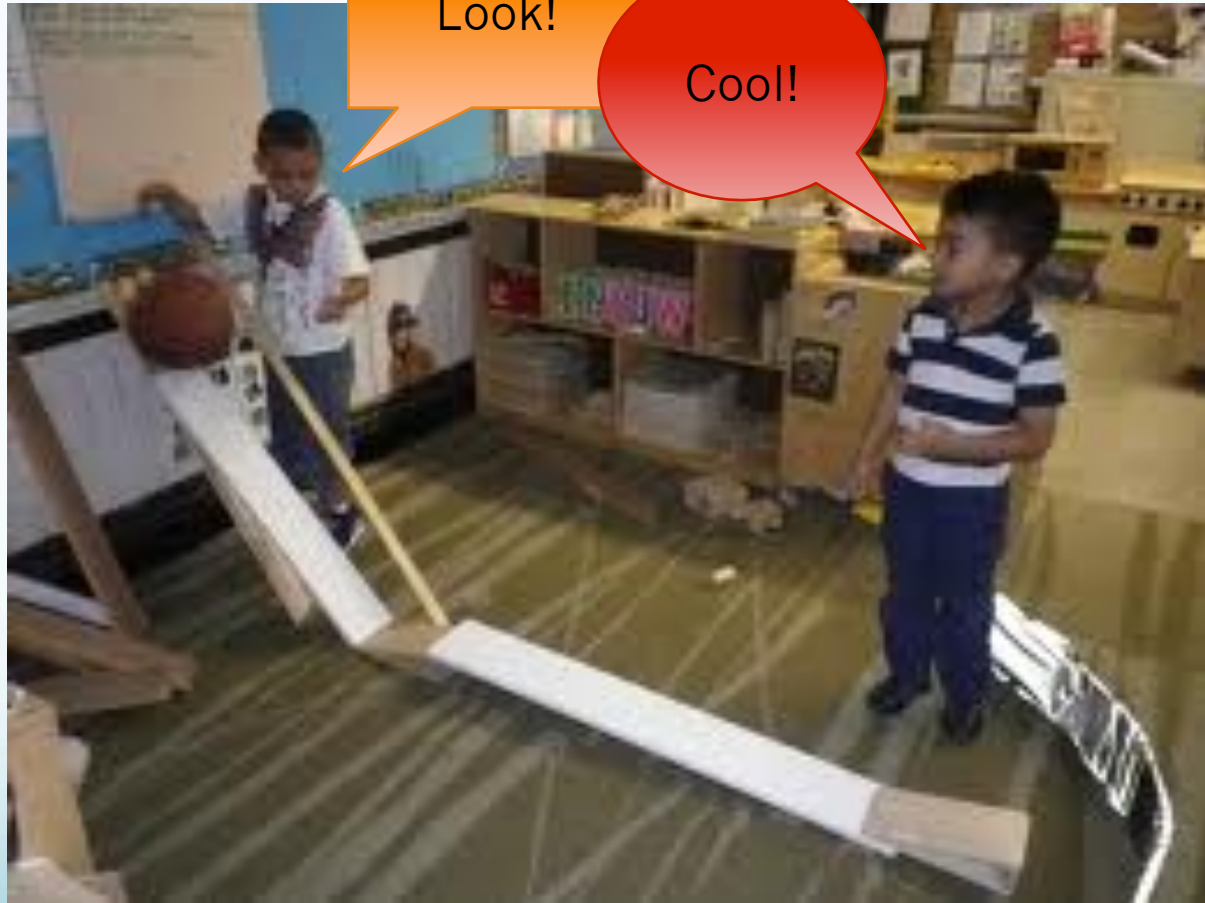


WHICH WOULD YOU
RATHER HEAR?

THIS

Look!

Cool!



OR THIS?

How far do you predict this basketball will roll?

I predict the basketball will roll farther than the ping pong ball.





Q & A