

Unit 5 Identify, Describe, Analyze, Compare and Create Shapes

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Course(s): **Sample Course**
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Title Section

Department of Curriculum and Instruction



Belleville Public Schools

Curriculum Guide

Mathematics Kindergarten

Unit 5: Identify, Describe, Analyze, Compare and Create Shapes

Belleville Board of Education

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Unit Overview

Unit 5 focuses on a variety of topics:

- Formally introduces many geometric ideas and terms such as : above, below, beside, next to, in front of, and behind.
- Name squares, circle, triangles, rectangle, hexagons, cubes, cones, cylinders, and spheres regardless of orientation and size.
- Identifying two categories of geometric figures, two dimensional (flat) or three dimensional (solid) shapes.
- Identify and describe certain two- and three- dimensional shapes by their sides, faces, and vertices.
- Analyze, compare and build two- and three- dimensional shapes.
- See and sort a variety of geometric shapes and real-world objects by indicating if they are flat or solid.

(reference topic 12 and topic 13 in the teacher's manual.)

NJSLS

MA.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.

MA.K.G.A.2	Correctly name shapes regardless of their orientations or overall size.
MA.K.G.A.3	Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).
MA.K.G.B	Analyze, compare, create, and compose shapes.
MA.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).
MA.K.G.B.5	Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
MA.K.G.B.6	Compose simple shapes to form larger shapes.

Exit Skills

By the end of Kindergarten Mathematics, students in the Belleville Public Schools will be able to:

- **Represent and compare whole numbers, initially with sets of objects. Students will also work toward fluency in addition and subtraction with whole numbers within 5:**

In Kindergarten students develop a foundation for numbers; they learn to count to 100 and write numbers to 20. Attention is given to numbers 11-20, with an emphasis on tens and ones, to build a foundation for place value understanding. Students begin to add and subtract in kindergarten. They represent quantities to solve problems, and they model simple joining and separating situations with sets of objects or eventually with equations such as $5 + 2 = 7$ and $7 - 2 = 5$. Students use strategies to add and subtract such as quickly recognizing the cardinalities of small sets of objects, counting and producing sets of given sizes, counting the number of objects in combined sets, or counting the number of objects that remain in a set after some are taken away.

- **Describe shapes and space:**

Students describe their physical world using geometric ideas (e.g., shape, orientation, spatial relations) and vocabulary. They identify, name, and describe basic two-dimensional shapes, such as squares, triangles, circles, rectangles, and hexagons; and three-dimensional shapes such as cubes, cones, cylinders, and spheres. They use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes.

Enduring Understanding

Topic 12 focuses on:

1. A circle is round and does not have any corners (vertices).
2. A triangle has 3 sides and 3 corners (vertices).
3. A rectangle has 4 sides and 4 corners (vertices) that are right angles. A square has 4 equal sides and 4 vertices that are right angles. A square is a special type of rectangle.
4. Three- dimensional , or solid, figures have length,width, and height. Many everyday objects closely approximate standard geometric solids.

5. The position of objects can be determined in relation to surrounding objects and described using words.
6. Some objects can be solved by using objects to act out the actions in the problem.

Topic 13 focuses on:

1. 2-D shapes can be sorted and identified by their attributes.
2. Objects shaped like spheres, cones, and cylinders, can roll. Objects shaped like cubes, cones, and cylinders can stack and slide.
3. The flat surfaces of many solid figures have specific 2-D shapes.
4. You can make new flat shapes by putting together two or more flat shapes.
5. When building a given 2-D shape, the shape must exhibit all of the attributes of the shape.
6. 3-D shapes can be combined to create other 3-D shapes.

Essential Questions

- How can two- dimensional and three- dimensional shapes be identified and described?
- How can solid figures be named, described, compared, and composed?

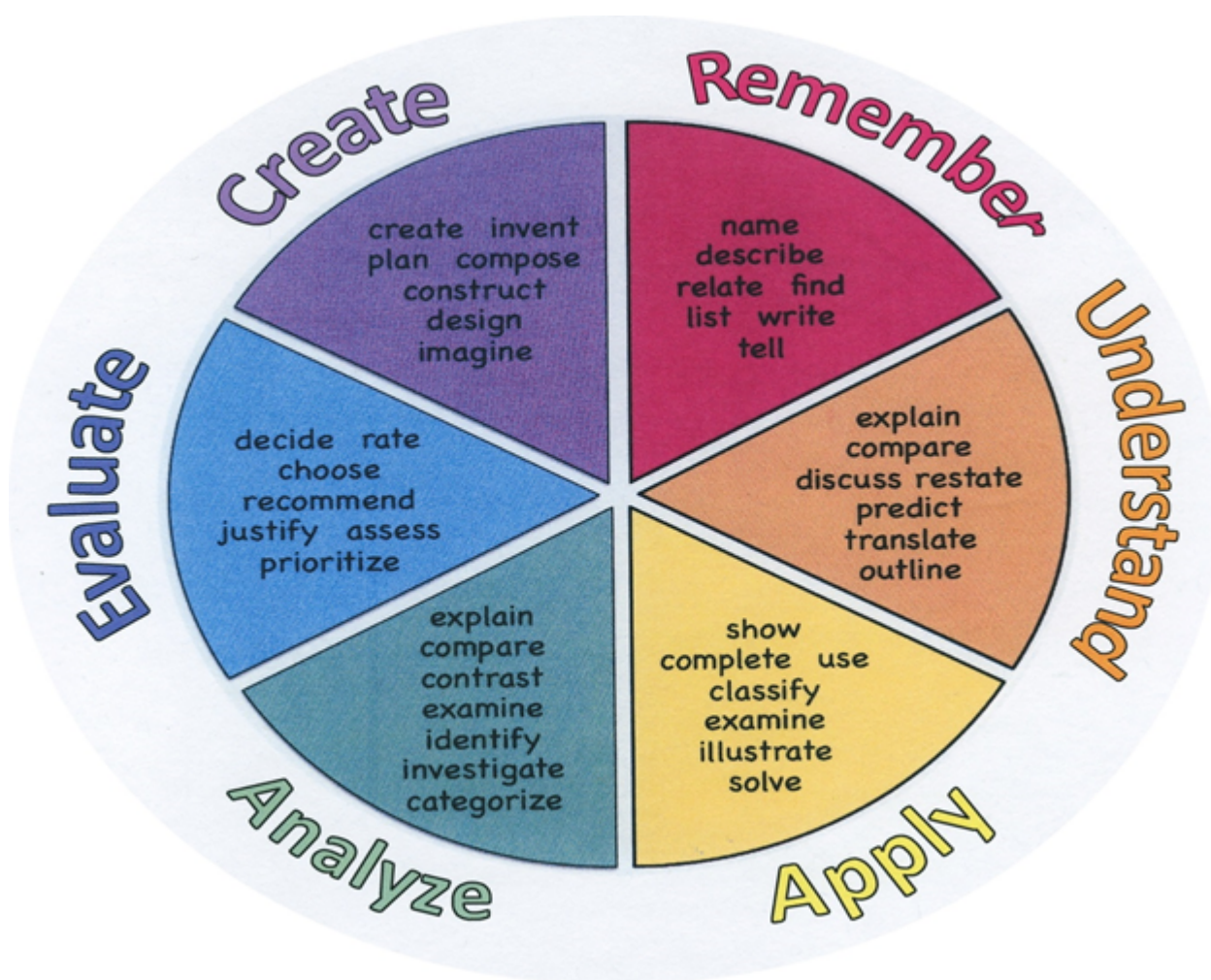
Learning Objectives

- **Identify** shapes by characteristics.
- **Describe** the difference between 2-D and 3-D shapes.
- **Construct** 2-D and 3-D shapes using materials.

Below are examples of action verbs associated with each level of the Revised Bloom's Taxonomy. These are useful in writing learning objectives, assignment objectives and exam questions.

Remember	Understand	Apply	Analyze	Evaluate	Create
Choose	Classify	Choose	Categorize	Appraise	Combine
Describe	Defend	Dramatize	Classify	Judge	Compose
Define	Demonstrate	Explain	Compare	Criticize	Construct
Label	Distinguish	Generalize	Differentiate	Defend	Design
List	Explain	Judge	Distinguish	Compare	Develop
Locate	Express	Organize	Identify	Assess	Formulate
Match	Extend	Paint	Infer	Conclude	Hypothesize
Memorize	Give Examples	Prepare	Point out	Contrast	Invent
Name	Illustrate	Produce	Select	Critique	Make
Omit	Indicate	Select	Subdivide	Determine	Originate
Recite	Interrelate	Show	Survey	Grade	Organize
Select	Interpret	Sketch	Arrange	Justify	Plan
State	Infer	Solve	Breakdown	Measure	Produce
Count	Match	Use	Combine	Rank	Role Play

Draw	Paraphrase	Add	Detect	Rate	Drive
Outline	Represent	Calculate	Diagram	Support	Devise
Point	Restate	Change	Discriminate	Test	Generate
Quote	Rewrite	Classify	Illustrate		Integrate
Recall	Select	Complete	Outline		Prescribe
Recognize	Show	Compute	Point out		Propose
Repeat	Summarize	Discover	Separate		Reconstruct
Reproduce	Tell	Divide			Revise
	Translate	Examine			Rewrite
	Associate	Graph			Transform
	Compute	Interpolate			
	Convert	Manipulate			
	Discuss	Modify			
	Estimate	Operate			
	Extrapolate	Subtract			
	Generalize				
	Predict				



SCI.K-2.5.1.2.A

Students understand core concepts and principles of science and use measurement and observation tools to assist in categorizing, representing, and interpreting the natural and designed world.

CCSS.ELA-Literacy.R.K

Reading

TECH.8.1.2

Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

Alignment to 21st Century Skills & Technology

Key SUBJECTS AND 21st CENTURY THEMES

Mastery of key subjects and 21st century themes is essential for all students in the 21st century.

Key subjects include:

- English, reading or language arts
- World languages
- Arts
- Mathematics
- Economics
- Science
- Geography
- History
- Government and Civics

21st Century/Interdisciplinary Themes

- Civic Literacy
- Environmental Literacy
- Financial, Economic, Business and Entrepreneurial Literacy
- Global Awareness
- Health Literacy

21st Century Skills

- Communication and Collaboration
- Creativity and Innovation
- Critical thinking and Problem Solving
- ICT (Information, Communications and Technology) Literacy
- Information Literacy

- Life and Career Skills
- Media Literacy

Technology Infusion

Smartboard

Lap-tops

Differentiation

- NJDOE: Instructional Supports and Scaffolds for Success in Implementing the Common Core State Standards <http://www.state.nj.us/education/modelcurriculum/success/math/k2/>
- Monitor progress, reteach as needed, and extend student thinking.
- Assess to identify students needs and then provide appropriate support.
- As needed, provide more instruction that is on level or below grade level for the students who are struggling.
- Use vocabulary cards, vocabulary activities, vocabulary review, and vocabulary glossary.
- Utilize **Quick Check** in order to determine differentiation of instruction. **Assess and differentiate** page will prescribe the differentiated instruction activity.

Special Education

- printed copy of board work/notes provided
- additional time for skill mastery
- assistive technology
- behavior management plan
- Center-Based Instruction
- check work frequently for understanding
- computer or electronic device utilizes
- extended time on tests/ quizzes
- have student repeat directions to check for understanding
- highlighted text visual presentation
- modified assignment format

- modified test content
- modified test format
- modified test length
- multiple test sessions
- multi-sensory presentation
- preferential seating
- preview of content, concepts, and vocabulary
- reduced/shortened reading assignments
- Reduced/shortened written assignments
- secure attention before giving instruction/directions
- shortened assignments
- student working with an assigned partner
- teacher initiated weekly assignment sheet
- Use open book, study guides, test prototypes

ELL

- teaching key aspects of a topic. Eliminate nonessential information
- using videos, illustrations, pictures, and drawings to explain or clarify
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slide shows, videos, etc.) to demonstrate student's learning;
- allowing students to correct errors (looking for understanding)
- allowing the use of note cards or open-book during testing
- decreasing the amount of work presented or required
- having peers take notes or providing a copy of the teacher's notes
- modifying tests to reflect selected objectives
- providing study guides
- reducing or omitting lengthy outside reading assignments
- reducing the number of answer choices on a multiple choice test
- tutoring by peers
- using computer word processing spell check and grammar check features
- using true/false, matching, or fill in the blank tests in lieu of essay tests

Intervention Strategies

- allowing students to correct errors (looking for understanding)
- teaching key aspects of a topic. Eliminate nonessential information
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slide shows, videos, etc.) to demonstrate student's learning
- allowing students to select from given choices

- allowing the use of note cards or open-book during testing
- collaborating (general education teacher and specialist) to modify vocabulary, omit or modify items to reflect objectives for the student, eliminate sections of the test, and determine how the grade will be determined prior to giving the test.
- decreasing the amount of work presented or required
- having peers take notes or providing a copy of the teacher's notes
- marking students' correct and acceptable work, not the mistakes
- modifying tests to reflect selected objectives
- providing study guides
- reducing or omitting lengthy outside reading assignments
- reducing the number of answer choices on a multiple choice test
- tutoring by peers
- using authentic assessments with real-life problem-solving
- using true/false, matching, or fill in the blank tests in lieu of essay tests
- using videos, illustrations, pictures, and drawings to explain or clarify

Evidence of Student Learning-CFU's

Please list ways educators may effectively check for understanding in this section.

- Admit Tickets
- Anticipation Guide
- Common benchmarks
- Compare & Contrast
- Create a Multimedia Poster
- Define
- Describe
- Evaluate
- Evaluation rubrics
- Exit Tickets
- Explaining
- Fist- to-Five or Thumb-Ometer
- Illustration
- Journals
- KWL Chart
- Newspaper Headline
- Outline
- Question Stems
- Quickwrite
- Quizzes
- Red Light, Green Light

- Self- assessments
- Socratic Seminar
- Study Guide
- Teacher Observation Checklist
- Think, Pair, Share
- Think, Write, Pair, Share
- Top 10 List
- Unit tests

Primary Resources

Envision Math 2.0 Volume 2

Ancillary Resources

www.scholastic.com

www.teacherspayteachers.com

www.brainpopjr.com