

# Unit 05: Representing and Interpreting Data

Content Area: **Template**  
Course(s):  
Time Period: **Full Year**  
Length: **FY**  
Status: **Published**

## Standards Alignment

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### New Jersey Student Learning Standards

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AAAA.K-12.1	Inquire, think critically, and gain knowledge.
AAAA.K-12.1.1	Skills
AAAA.K-12.1.1.1	Follow an inquiry-based process in seeking knowledge in curricular subjects, and make the real-world connection for using this process in own life.
AAAA.K-12.1.1.2	Use prior and background knowledge as context for new learning.
AAAA.K-12.1.1.3	Develop and refine a range of questions to frame the search for new understanding.
AAAA.K-12.1.1.4	Find, evaluate, and select appropriate sources to answer questions.
AAAA.K-12.1.1.6	Read, view, and listen for information presented in any format (e.g., textual, visual, media, digital) in order to make inferences and gather meaning.
AAAA.K-12.1.1.8	Demonstrate mastery of technology tools for accessing information and pursuing inquiry.
AAAA.K-12.1.2	Dispositions in Action
AAAA.K-12.1.2.3	Demonstrate creativity by using multiple resources and formats.
AAAA.K-12.1.2.4	Maintain a critical stance by questioning the validity and accuracy of all information.
AAAA.K-12.1.3	Responsibilities
AAAA.K-12.1.3.2	Seek divergent perspectives during information gathering and assessment.
AAAA.K-12.1.3.3	Follow ethical and legal guidelines in gathering and using information.
AAAA.K-12.1.3.5	Use information technology responsibly.
AAAA.K-12.1.4	Self-Assessment Strategies
AAAA.K-12.1.4.1	Monitor own information-seeking processes for effectiveness and progress, and adapt as necessary.
AAAA.K-12.1.4.2	Use interaction with and feedback from teachers and peers to guide own inquiry process.
AAAA.K-12.1.4.3	Monitor gathered information, and assess for gaps or weaknesses.
AAAA.K-12.1.4.4	Seek appropriate help when it is needed.
AAAA.K-12.2	Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.
AAAA.K-12.2.1	Skills
AAAA.K-12.2.1.1	Continue an inquiry- based research process by applying critical- thinking skills (analysis, synthesis, evaluation, organization) to information and knowledge in order to construct new understandings, draw conclusions, and create new knowledge.
AAAA.K-12.2.1.2	Organize knowledge so that it is useful.

AAAA.K-12.2.1.3	Use strategies to draw conclusions from information and apply knowledge to curricular areas, real-world situations, and further investigations.
AAAA.K-12.2.1.4	Use technology and other information tools to analyze and organize information.
AAAA.K-12.2.1.5	Collaborate with others to exchange ideas, develop new understandings, make decisions, and solve problems.
AAAA.K-12.2.3	Responsibilities
AAAA.K-12.2.3.1	Connect understanding to the real world.
AAAA.K-12.2.4	Self-Assessment Strategies
AAAA.K-12.2.4.1	Determine how to act on information (accept, reject, modify).
AAAA.K-12.2.4.2	Reflect on systematic process, and assess for completeness of investigation.
AAAA.K-12.2.4.3	Recognize new knowledge and understanding.
AAAA.K-12.3	Share knowledge and participate ethically and productively as members of our democratic society.
AAAA.K-12.3.1	Skills
AAAA.K-12.3.1.1	Conclude an inquiry-based research process by sharing new understandings and reflecting on the learning.
AAAA.K-12.3.1.4	Use technology and other information tools to organize and display knowledge and understanding in ways that others can view, use, and assess.
AAAA.K-12.3.3	Responsibilities
AAAA.K-12.3.3.1	Solicit and respect diverse perspectives while searching for information, collaborating with others, and participating as a member of the community.
AAAA.K-12.3.3.2	Respect the differing interests and experiences of others, and seek a variety of viewpoints.
AAAA.K-12.3.3.7	Respect the principles of intellectual freedom.
AAAA.K-12.4	Pursue personal and aesthetic growth.
AAAA.K-12.4.1	Skills
AAAA.K-12.4.1.5	Connect ideas to own interests and previous knowledge and experience.
AAAA.K-12.4.1.6	Organize personal knowledge in a way that can be called upon easily.

## **Integration of Career Readiness, Life Literacies and Key Skills**

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CRP.K-12.CRP1	Act as a responsible and contributing citizen and employee.
CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP3	Attend to personal health and financial well-being.
CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
CRP.K-12.CRP5	Consider the environmental, social and economic impacts of decisions.
CRP.K-12.CRP6	Demonstrate creativity and innovation.
CRP.K-12.CRP7	Employ valid and reliable research strategies.
CRP.K-12.CRP8	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP.K-12.CRP9	Model integrity, ethical leadership and effective management.
CRP.K-12.CRP10	Plan education and career paths aligned to personal goals.
CRP.K-12.CRP11	Use technology to enhance productivity.

## **Technology / Integration of Computer Science and Design Thinking**

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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.
TECH.8.1.2.A	Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations
TECH.8.1.2.A.1	Identify the basic features of a digital device and explain its purpose.
TECH.8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e., games, museums).
TECH.8.1.2.B	Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.
TECH.8.1.2.B.1	Illustrate and communicate original ideas and stories using multiple digital tools and resources.

## **Interdisciplinary Connections: NJSLs for ELA, Social Studies, Science and/or Math Section**

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LA.K-12.NJSLSA.SL	Speaking and Listening Comprehension and Collaboration
LA.K-12.NJSLSA.SL1	Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
LA.K-12.NJSLSA.SL2	Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
LA.K-12.NJSLSA.SL6	Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.
LA.SL.K.1	Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
LA.SL.K.1.A	Follow agreed-upon norms for discussions (e.g., listening to others with care and taking turns speaking about the topics and texts under discussion).
LA.SL.K.1.B	Continue a conversation through multiple exchanges.
LA.SL.K.2	Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.
LA.SL.K.6	Speak audibly and express thoughts, feelings, and ideas clearly.

## **Integration of Diversity, Equity and Inclusion; Climate Change; Informational and Media LiteracyNew Section**

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see Crosswalks

## 21st Century Life and Careers

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### Stage I: Desired Results

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### Transfer/Overview/Rationale

#### Transfer / Overview / Rationale

##### Unit Rationale

The purpose of this unit...

21st-Century learners use digital tools to represent and interpret data.

This will also serve as a cross-curricular introduction for two other Kindergarten units:

Math - "Classifying and Sorting Data"

Science - "Unit B: Earth Science - Weather & Seasons"

### Meaning

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### Essential Questions

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#### Essential Questions

- How can technology systems be used as a tool to create, express, and share information (e.g. drawing a picture, illustrating a story)?
- How can I use digital tools to collect and organize information?
- What are advantages and disadvantages to using technology?

## **Enduring Understanding/Indicators of Understanding**

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### Enduring Understanding/Indicators of Understanding

- Computers are a tool to gather and communicate information, and to identify trends through pictures.
- 21st-Century learners transfer current knowledge to learning of new technologies.

## **Acquisition (Student Learning Objectives)**

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### **Knowledge**

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#### Knowledge

Students will know...

- Basic terminology of a drawing application (e.g. paintbrush, paint bucket [fill], color palette, Undo).
- To define, create, and interpret a glyph.

### **Skills**

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#### Skills

Student will be skilled at ...

- Accessing and using drawing applications.
- Creating original works, as a means of personal or group expression.
- Analyzing data and reporting results.

## **Stage 3: Learning Plan**

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### **Resource and Mentor Texts**

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#### Resources and Mentor Texts

- Drawing program (e.g. Google Drawings)
- \*\*While a snowman template and direction set is attached, any glyph template can be used.\*\*

## **Formative Assessment Strategies**

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### Formative Assessment Strategies

- Hand signals
- Misconception check
- Student conference
- Observation
- Choral response
- Debriefing
- Think-pair-share
- Ticket to leave
- Turn to your partner
- Oral questioning

## **Learning Activities/Unit of Study**

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### Learning Activities/Unit of Study

- Glyph introduction
  - Students will be introduced to the concept of a glyph, as a way to represent and display information through colors and objects in pictures.
  
- Activity introduction
  - Students will view examples of finished glyphs and the information they depict.
  - Students will review proper use of the drawing program.
  
- Glyph activity
  - Students will load glyph template and will follow oral directions to complete picture.
  - Students will add their names to the image.
  
- Gallery walk
  - Students will display and view glyphs. Students will analyze and discuss works.

## **Modifications and/or Accommodations**

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### **Suggested Modifications (ELL, Sp. Ed, Gifted, At-risk of Failure)**

#### **English Language Learners**

Native language support: The teacher provides auditory or written content to students in their native language.

Adjusted Speech: The teacher changes speech patterns to increase student comprehension. This could include facing the students, paraphrasing, clearly indicating the most important ideas, and speaking more slowly.

Visuals: The teacher uses graphics, pictures, visuals, and manipulatives. This helps ELL students better understand and comprehend the subjects at hand.

Front-Loading Vocabulary: The teacher front loads vocabulary. This means providing students with a list of important vocabulary words they will need to know for a book, lesson, etc. prior to the lesson being taught. Including pictures to go with the vocabulary words is also very beneficial for the students.

#### **Special Education Students**

Chunking: The teacher presents information in a way that makes it easy for students to understand and remember. Chunking is based on the presumption that our working memory is easily overloaded by excessive detail. The best way to deliver information is to organize it into meaningful units. Because students with special needs get overloaded easily, chunking is an effective strategy to use with them.

Checking for Understanding: It is important to constantly check for understanding, especially for students who have accommodations. Teachers want to make sure students understand the concepts being covered in a way that makes sense to them.

Extra time: The teacher provides students with special needs extra time to complete work or answer questions. It is important to give students enough time to process their thoughts.

Oral Reading: The teacher will read work orally to students. Class work such as tests and literature circles may need to be read aloud to the student.

Timers: The teacher will use timers as an instructional tool. The use of timers is beneficial for students who have trouble completing tasks. Timers can be helpful so the student is aware of how much time they have to complete an assignment.

#### **Students with 504 Plans**

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**Extra time:** The teacher provides students with special needs extra time to complete work or answer questions. It is important to give students enough time to process their thoughts.

## **Gifted & Talented Strategies**

**Extensions/Enrichments:** Teachers will provide gifted and talented students with extension/enrichment projects. Students will be challenged to further their understanding, to apply acquired knowledge, and/or to produce something in reference to acquired knowledge.

**Modify/Change Activities:** Teachers will monitor and modify activities to accommodate those students who need to be challenged further. Additional reading, problem-solving, writing, or project work is necessary for those students who are ready to move on at a rate more accelerated than their peers. In this way, G & T students are provided the same opportunity for support as special needs students.

## **Students at Risk of School Failure**

**Directions or Instructions:** Make sure directions and/or instructions are given in limited numbers. Give directions/instructions verbally and in simple written format. Ask students to repeat the instructions or directions to ensure understanding occurs. Check back with the student to ensure he/she hasn't forgotten.

**Peer Support:** Peers can help build confidence in other students by assisting in peer learning. Many teachers use the 'ask 3 before me' approach. This is fine, however, a student at risk may have to have a specific student or two to ask. Set this up for the student so he/she knows who to ask for clarification before going to you.

**Alternate or Modified Assignments:** Always ask yourself, "How can I modify this assignment to ensure the students at risk are able to complete it?" Sometimes you'll simplify the task, reduce the length of the assignment or allow for a different mode of delivery. For instance, many students may hand something in, the at-risk student may jot notes and give you the information verbally. Or, it just may be that you will need to assign an alternate assignment.

**Increase One to One Time:** When other students are working, always touch base with your students at risk and find out if they're on track or needing some additional support. A few minutes here and there will go a long way to intervene as the need presents itself.

**Contracts:** It helps to have a working contract between you and your students at risk. This helps prioritize the tasks that need to be done and ensure completion happens. Each day write down what needs to be completed, as the tasks are done, provide a checkmark or happy face. The goal of using contracts is to eventually have the student come to you for completion sign-offs.

**Hands On:** As much as possible, think in concrete terms and provide hands-on tasks. This means a child doing math may require a calculator or counters. The child may need to tape record comprehension activities instead of writing them. A child may have to listen to a story being read instead of reading it him/herself.

**Tests/Assessments:** Tests can be done orally if need be. Break tests down in smaller increments by having a portion of the test in the morning, another portion after lunch and the final part the next day.

**Seating:** Seat students near a helping peer or with quick access to the teacher. Those with hearing or sight issues need to be close to the instruction which often means near the front.