



Lesson Plan for Implementing NETS•S—Template I (More Directed Learning Activities)

Template with guiding questions

Teacher(s)

Name Lilly Hanna

Position

Math Teacher

School/District

Brumby/Cobb

E-mail

Lilly.hanna@cobbk12.org

Phone

770-2354361

Grade Level(s)

4th

Content Area

Math/Social Studies/Technology

Time line

3 weeks

Standards (What do you want students to know and be able to do? What knowledge, skills, and strategies do you expect students to gain? Are there connections to other curriculum areas and subject area benchmarks?)

MGSE4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec.

- a. Understand the relationship between gallons, cups, quarts, and pints.
- b. Express larger units in terms of smaller units within the same measurement system.
- c. Record measurement equivalents in a two column table.

MGSE4.MD.2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

MGSE4.NBT.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.

MGSE4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place.

MGSE4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.

MGSE4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

SS4E2 Identify the elements of a personal budget (income, expenditures, and saving) and explain why personal spending and saving decisions are important.

ISTE Standards for Students:

1. Empowered Learner
 - c. Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.
 - d. Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.
2. Digital Citizen
 - b. Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.
3. Knowledge Constructor
 - c. Students curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.
 - d. Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions
4. Innovative Designer
 - a. Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
 - b. Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.
 - c. Students develop, test and refine prototypes as part of a cyclical design process.
 - d. Students exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.
5. Computational Thinker
 - b. Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.
6. Creative Communicator
 - a. Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.
 - b. Students create original works or responsibly repurpose or remix digital resources into new creations.
 - c. Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.
 - d. Students publish or present content that customizes the message and medium for their intended audiences.
7. Global Collaborator
 - a. Students use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.
 - b. Students use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.
 - c. Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.
 - d. Students explore local and global issues and use collaborative technologies

Overview (a short summary of the lesson or unit including assignment or expected or possible products)

This culminating lesson will assess several skills taught in the 4th grade math units. Students can work in small groups or individually to create an itinerary for a family vacation. Students will research our country. First, choosing three states they think they would like to visit. They will then move on to the other continents and research three places in each continent that they would like to visit. Students will collect data of distance from home to each location and time travel by car (if applicable) and/or by plane. Students will use Excel or Google Sheet to make an expense sheet. Students will have to calculate the cost of their family trip including transportation, meals, hotel (or other accommodations) and at least three excursions. In the students' itinerary, they will include times and dates for their seven day adventure. Throughout the activity students can choose to use a variety of technology tools and applications to complete challenges. For example, they can make a video commercial using Adobe Spark, Movie or a green screen app, a podcast journaling the highlights of each day, they can use Google Tour Builder to take the class on the vacation or submit their own ideas.

Essential Questions (What essential question or learning are you addressing? What would students care or want to know about the topic? What are some questions to get students thinking about the topic or generate interest about the topic? What questions can you ask students to help them focus on important aspects of the topic? What background or prior knowledge will you expect students to bring to this topic and build on?)

How can we use what we know about fluently adding and subtracting multi-digit whole numbers using standard algorithm?

How can we use the four operations to solve problems including distance, time, money and simple decimals?

How can we use elements of personal budget to create a family vacation plan?

How can we use an itinerary to solve problems with time and elapsed time?

What does your dream vacation look like?

Do you like mountains, beach, forest, desert or snow?

Have you ever been on an airplane?

If you could go anywhere in the world where would you go?

What are the seven wonders of the world?

What are some must visit places you have heard people talk about, but never knew what it was or where it was?

What type of excursions would you like to go on? What types of activities do you like to do?

Assessment (What will students do or produce to illustrate their learning? What can students do to generate new knowledge? How will you assess how students are progressing (formative assessment)? How will you assess what they produce or do? How will you differentiate products?)

Students will create a daily itinerary for a seven day vacation as well as a budget sheet with estimated total expenses. Students will demonstrate that they can the distance in mile from home to several places as well as compare time travel by car verses by plane. Students can then use voice and choice to demonstrate knowledge through video, Google Tour Builder, make a brochure, make a news cast about current events in the area where they are going to travel or pitch their own creative idea to me

Resources (How does technology support student learning? What digital tools, and resources—online student tools, research sites, student handouts, tools, tutorials, templates, assessment rubrics, etc—help elucidate or explain the content or allow students to interact with the content? What previous technology skills should students have to complete this project?)

Students will use technology throughout this project. The project will be sent to them through their Office 365 account using OneNote. All work will be turned in and commented on through OneNote. We also have a class collaboration page where students can suggest places to visit, excursions to take, places to stay and places to eat. Then students can use technologies tools to create itinerary, budget, videos, brochures, map quizzes and the list goes on. Students will use <https://www.google.com/earth/>, <https://www.google.com/maps>, <https://online.seterra.com/en/vgp/3003>, <https://www.travelmath.com>, and other sites.

Instructional Plan

Preparation (What student needs, interests, and prior learning provide a foundation for this lesson? How can you find out if students have this foundation? What difficulties might students have?)

Students will need some prior knowledge of places around their country and the world. Their interests will drive the type of vacation they would like to take. Their prior learning of the four operations to solve problems including distance, time, money and simple decimals will be needed to complete this activity. I will know if students have this foundation through formative assessments and check-ins as they work to complete their project. Students will also need some prior knowledge of Web 2.0 tools and how to navigate safely through the internet to search for vacation places.

Management Describe the classroom management strategies will you use to manage your students and the use of digital tools and resources. How and where will your students work? (small groups, whole group, individuals, classroom, lab, etc.) What strategies will you use to achieve equitable access to the Internet while completing this lesson? Describe what technical issues might arise during the Internet lesson and explain how you will resolve or troubleshoot them?

Students will be working in small groups or individually to complete project. Before we begin the project we will review digital citizenship and internet safety policies and procedures. I have a class set of laptops so all students will have access to a device and we have enough I pads available for students to create videos and use other applications. Students will have class time to work on the project as well as permission for the computer lab teacher and social studies teacher to work on their project in those classes as well. Students can access Office 365 at home and can work on the project at home if they have access to a device and internet. Students will need to know their Cobb County student identification number in order to log into the computers and access their Office 365 account. I have access to all student identification number and Office 365 usernames and passwords. If a username and password does not work the librarian has the ability to reset passwords. Since this is a culminating activity if internet service issues arise I will extend the time students have to complete the project.

Instructional Strategies and Learning Activities – Describe the research-based instructional strategies you will use with this lesson. How will your learning environment support these activities? What is your role? What are the students' roles in the lesson? How can you ensure higher order thinking at the analysis, evaluation, or creativity levels of Bloom's Taxonomy? How can the technology support your teaching? What authentic, relevant, and meaningful learning activities and tasks will your students complete? How will they build knowledge and skills? How will students use digital tools and resources to communicate and collaborate with each other and others? How will you facilitate the collaboration?

For this project I will serve as a facilitator of student learning and be available to assist with students as needed. Students will use critical thinking, communication, collaboration and creativity throughout the project process. Through this real-world application students will find the cost and create an itinerary for a family vacation as they take on the authentic role of a travel agent. Students will analyze their destination choices to make a realistic cost effective family vacation. They will need to evaluate the type of vacation they would like to take and consider additional costs, such as passports and vaccinations, if they are traveling to another country. Students will use creativity when it comes to choosing how to present their trip through challenges they can complete or create. Students will use digital tools to access information, document information, communicate with peers and teacher and receive feedback from teacher.

Differentiation (How will you differentiate content and process to accommodate various learning styles and abilities? How will you help students learn independently and with others? How will you provide extensions and opportunities for enrichment? What assistive technologies will you need to provide?)

Students will have several differentiation opportunities. Students who are uncomfortable with using Excel or Google Sheet will be able to create their expense sheet in written form or using Microsoft Word. Students who need an abbreviated trip can plan a three day trip instead of a seven day trip. Students who need visuals will have the option of watching how to videos. For example, how to cut and paste a document or how to use Excel or Google Sheet. Students will also have the opportunity to collaborate and learn from others. There are several challenge choices as well as student ideas to present information in a way that best suits each individual student. Assistive tools will be available for students to use such as closed caption on videos, dictations in OneNote, and text to voice option. The project also has several challenges available to extend and enrich student; 50 states quiz, country quizzes, creating brochures, news casts, travel video, Google Tour Builder, and students can create their own.

Reflection (Will there be a closing event? Will students be asked to reflect upon their work? Will students be asked to provide feedback on the assignment itself? What will be your process for answering the following questions?)

- Did students find the lesson meaningful and worth completing?
- In what ways was this lesson effective?
- What went well and why?
- What did not go well and why?
- How would you teach this lesson differently?)

Students will present their projects to families and local travel agents as a closing event. Students will be given a survey to reflect on their learning and provide feedback on the assignment itself. I will use student feedback to continue to tweak the lesson. If students are not finding the lesson meaningful and worth completing I will then have to consider changing the lesson, moving it to another grade level, or discarding the lesson.

Closure: Anything else you would like to reflect upon regarding lessons learned and/or your experience with implementing this lesson. What advice would you give others if they were to implement the lesson?

I would advise others to take a journey through the lesson before implementation. Make sure you are familiar with all the technologies that will be used and how to manipulate programs. Being familiar with Office 365 OneNote is key for this project. If someone does not like this format this project could easily be transferred into a Weebly and used as a WebQuest.