

Connections

Computer Technology Skills

Grade 4

Objective 2.10: Storyboard and modify multimedia projects with menus, branching and/or multiple outcomes for content areas, citing sources as a group activity. Strand - Multimedia/Presentation

Activities

Students will either research a pig or a wolf because these are the animals found in the book.

Animal slide shows!

Materials/resources:

- science textbook
- encyclopedia
- books on animals

Technology resources:

- computer
- printer
- slide show capability (ClarisWorks or PowerPoint program, for example)
- internet access if desired

The students will research the animal assigned to them either a pig or a wolf. Each of the following pages of their slide show will be prepared and corrected ahead of time. Computer class time will be spent on actually creating the student's individual slide show.

Slide Show

Each slide show will consist of 4–5 pages.

- Page 1: A title page which includes the name of the animal and the author along with a drawing of the animal in its natural environment.
- Page 2: A scientific classification of each animal using kingdom, phylum, class, order, family, genus, species
- Page 3: A graphic organizer (webbing works well) summarizing the five basic needs of each animal—food, water, oxygen, climate, shelter.

- Page 4: A chart of the animal's behaviors which include those that are learned and those that they are born with (instincts).
- Page 5: An extra credit page which would include interesting facts the student has found about the animal.

Conclusion of Project

Sit back and enjoy a special time (slide show afternoon!) viewing all of the students' slide shows while enjoying popcorn or other refreshments!

<http://www.learnnc.org/lessons/Mbartolomucci5232002026>

Author: Margie Bartolomucci

Connections

Computer Technology Skills

Grade 4

Objective 3.07: Locate, select, organize, and present content area information from the Internet for a specific purpose and audience, citing sources. Strand - Telecommunications/Internet

Activities

Area and perimeter unit

Materials/resources:

Pencil and paper

Technology resources:

Either a computer lab or one classroom computer. Internet access and a color monitor are required.

Day 1

Ask students to recall information about polygons.

You might ask students to consider how they might trace the perimeter of a polygon that is drawn on the board, or you may begin the day by running the perimeter of the school!

Let the students know what it is they will be doing and learning today. Say something like this:

Today, Class, we will be talking more about the perimeter of polygons. We will learn exactly what this term means, and we will learn how to calculate the perimeter of random shapes.

We are going to use the computers to learn about perimeter, but please do not turn your computers on or go to this page until I ask you to. I want to show you a little about the Perimeter Explorer applet first. Click on the Help tab for directions.

I always emphasize RIM in peRIMeter. I say that we are measuring the outside RIM of our shape.

Do the [Perimeter Explorer Activity](#).

Day 2

Explain the term “area” and give examples of how to calculate the area of random shapes using [Area Explorer](#). Click on the Help tab for directions.

Day 3

Use [Shape Explorer](#) to practice both area and perimeter. Click on the Help tab for directions.

Day 4

Assess student understanding of area and perimeter skills by observing and recording students' use of the applets from Days 1–3. See Assessment section.

<http://www.learnnc.org/lessons/BonnieBoaz2112003705>

Author: Bonnie Boaz

Connections

Computer Technology Skills

Grade 4

Objective 3.01: Select and use technology tools (e.g., probe ware, digital camera, scanners) to collect, analyze, and display information for content assignments. Strand - Societal/Ethical Issues

Activities

Habitat photo album

Materials/resources:

Poster board

Ecosystem poster or pictures

Technology resources:

Computer with monitor and printer

Word processing program

Digital camera

1. Teacher will display ecosystem poster or pictures to students. Ask them to identify any habitats they see. Ask students what makes up a habitat. (Shelter, water, food, space)
2. Divide your class into groups of two or three.
3. Give students the following directions:

Your task is to become investigators of the animal world. You will be given a digital camera and I want you to search out an ecosystem. It can be any ecosystem you choose. Once you locate your ecosystem I want you to choose an animal that lives there and take a picture of its habitat. Document its food source, water source, shelter and living space.

Once you have compiled your data you will print out your pictures and present them to the class. Your photographs must be labeled and identified. You may include photographs of any other information you feel is relevant.

<http://www.learnnc.org/lessons/ColleenBuchauer2112003734>

Author: Colleen Buchauer and Lesley Brooks

Computer Technology Skills

Grade 4

Objective 2.09: Recognize and discuss guidelines for media (e.g., personal information, images, content, language) to consider in developing multimedia projects as a class/group. Strand - Multimedia/Presentation

Activities

HyperStudio animal project

Materials/resources:

Students need to have information about an animal's habitat, adaptations, and other interesting facts.

Students need planning sheets for each card, which can be as simple as sketching the cards on notebook paper.

Technology resources:

HyperStudio multimedia program

HyperStudio [tutorial](#)

Computer for each student

Students will create a HyperStudio project, which contains four cards, containing the following information:

- 1st card—Title of project using the animal's name, student name, picture of the animal (can be clip art, scanned picture, imported from internet, etc.). Add a button that takes you to the next card.
- 2nd card—Titled “Habitat,” include a paragraph about where the animal lives. A picture is optional. Add a button that takes you to the next card.
- 3rd card—Titled “Adaptations,” include a paragraph about the animal's special adaptations. Picture is optional. Add a button that takes you to the next card.
- 4th card—Titled “Fun Facts,” include a paragraph with information the students found interesting. Picture is optional. Add a button that takes you back to the first card.

<http://www.learnnc.org/lessons/lentzs2112003664>

Author: Suzanne Lentz

Computer Technology Skills

Grade 4

Objective 1.07: Identify, discuss, and visually represent how and why databases are used in North Carolina (e.g., schools, government, business, and science) to collect and organize information. Strand - Database

Objective 1.08: Identify and discuss how spreadsheets are used to calculate and graph data in a variety of settings (e.g., schools, government, business, industry). Strand - Spreadsheet

Objective 2.01: Sort and search/filter a prepared content area database for information and use correct terms/concepts to explain strategies used as a class activity. Strand - Database

Objective 2.02: Plan and use two criteria to search/filter prepared databases to locate and organize information for content assignments. Strand - Database

Objective 2.03: Identify, discuss, and use the spreadsheet terms/concepts (e.g., cell, column, row, values, labels, graph, formula). Strand - Spreadsheet

Objective 2.04: Enter/edit data in prepared spreadsheets to perform calculations using simple formulas (+, -, *, /) and observe the changes that occur. Spread - Spreadsheet

Objective 2.05: Use spreadsheets and graphs to organize, calculate, and display data in content areas. Strand – Spreadsheet

Activities

Nutritional Value Unit Integrated with Microsoft Works

Materials/resources:

A food pantry of nonperishable items

Create a Database [Handout](#)

Create a Spreadsheet [Handout](#)

Tips for Sorting and Filtering [Handout](#)

Questions for Manipulating the Database [Handout](#)

Technology resources

A Computer in Your Classroom or A Computer Lab Microsoft Works

This activity can be done in the classroom on a single computer or you can do this in a lab with an entire class.

1. Bring in Food Items
Have students bring in nonperishable food items. You can use canned fruit, canned vegetables, canned soup, spaghetti sauce, cereal, and junk food. The database can contain information about one food group or one type of food or can be a combination of foods. By using filtering techniques with the database, you can use a combination of foods and isolate only the food at which you want to look.
2. Create a Database
Show students how to create a database. Discuss the restrictions for naming fields and how to go back and make corrections. Students need to know how to edit a database. Give students the How To Create A Database Handout. I have included very detailed instructions in my handouts. You may want to edit and condense these depending on what your students already know.
3. Enter Information in the Database
Each student can enter information from the product that he/she contributed. You can also have a "Database Master" who is responsible for data input. You can have students build the database in your classroom and then have copies of the database available for everyone to use in a computer lab to manipulate and analyze the data as a class if you have a computer lab available. If you do not have access to a computer lab, allow students to work individually or in groups at the computer in your classroom to complete the assignment.
4. Answer Questions about the Database
Depending on the database you build, you will need to create a set of questions for students to answer. You may also opt to have students design the questions themselves. I encourage you to use questions that build higher order thinking skills. You can also integrate math skills into this unit by having students sort the database to find range, median, and mode. I have included a sample list of questions to get you started.
5. Create a Spreadsheet and Graphs
Show students how to create and edit graphs using a spreadsheet. Give students the How to Create a Spreadsheet Handout. Students will copy data from the database to the spreadsheet and then create their own graphs.
6. Analyze the Graphs
Students can use the word processor in Microsoft Works to write a report summarizing their findings as a result of having graphed the nutritional information. Students can copy and paste the graphs from the spreadsheet into their word processed documents and print them as a final product for assessment.

<http://www.learnnc.org/lessons/GretchenParrish7242002679>

Author: Gretchen Parrish

NUTRITIONAL VALUE DATABASE HANDOUT

(Vocabulary and more specific details about using the database follow at the end if you need them.)

Create a database with the following fields:

Due to established restrictions, use brackets instead of parentheses and the abbreviation “Per” instead of the % symbol. Also remember not to use a period if you abbreviate. Adjust the list of field names as needed.

Food
Brand
Serv Size [g]
Calories
Fat [g]
Chol [mg]
Sodium [mg]
Total Carb [g]
Fiber [g]
Sugars [g]
Protein [g]
Per Vit A
Per Vit C
Per Calcium
Per Iron

****From here down, each field should be changed from text to number under Type.

Save the database.

Save the database on your disk as Nutritional Value Database.

Enter information into the database.

Discuss with your students how you want them to enter information in the database. Be sure to tell students to format the field as a number where appropriate. When fields are formatted as numbers, no letters or symbols or words are allowed.

Change field widths.

Select the field and drag the field’s handles to make it the size you want.

Change field alignment as appropriate.

To center the contents of a field, highlight multiple fields or click in a single field.

Click on Format. Drag down to Alignment and then over to Center.

Change orientation and margins.

To change the page orientation, click on File and drag down to Page Setup. Choose the landscape option. Click on Document and change the left and right margin to .5 to allow more room on the page. You can also change the scaling to less than 100% to get the database on one page.

Save the database again!

Proofread the database.

Check to be sure all information was copied correctly. Make any other editing adjustments as needed.

Other things to consider . . .

What are some other fields that may need to be added to this database?
How will you use the information in the database?

NUTRITIONAL VALUE SPREADSHEET HANDOUT

(Vocabulary and more specific details about using the spreadsheet follow at the end if you need them.)

Open the NUTRITIONAL VALUE DATABASE. If your database is very large, you may want to filter for only certain criteria before creating your graph.

Click on File and choose New. Select Spreadsheet.

Save the file on your disk and name it NUTRITIONAL VALUE SPREADSHEET.

Click on Window and drag down to NUTRITIONAL VALUE DATABASE.

Sort the information in alphabetical order on the field named Food.

Highlight all the information in the Food field. Click on Edit and drag down to copy.

Click on Window and drag down to NUTRITIONAL VALUE SPREADSHEET.

Click in cell A1.

Click on Edit and drag down to paste.

Click on Window and drag down to NUTRITIONAL VALUE DATABASE.

Highlight all the information in the Total Carb [g] field.

Click on Edit and drag down to copy.

Click on Window and drag down to NUTRITIONAL VALUE SPREADSHEET.

Click in cell B1.

Click on Edit and drag down to paste.

Save the spreadsheet again.

Highlight all the information in the spreadsheet.

Click on Tools and drag down to Create A New Chart.

Double click on the chart to change the name or type of chart. Line or Bar would be best.

To edit various elements of the chart, click on Edit, drag down to Works Chart Object, and drag

over to Touch Up Chart.

Save the spreadsheet again.

To move the chart out of the way, click on the chart and drag it down below the spreadsheet.

You can also create a double bar or double line graph using this same spreadsheet.

Click on Window and drag down to NUTRITIONAL VALUE DATABASE.

Highlight all the information in the Sugars [g] field.

Click on Edit and drag down to copy.

Click on Window and drag down to NUTRITIONAL VALUE SPREADSHEET.

Click in cell C1.

Click on Edit and drag down to paste.

Save the spreadsheet again.

Highlight all the information in the spreadsheet.

Click on Tools and drag down to Create A New Chart.

Double click on the chart to change the name or type of chart. Line or Bar would be best.

To edit various elements of the chart, click on Edit, drag down to Works Chart Object, and drag

over to Touch Up Chart.

Save the spreadsheet again.

As you can see, you can have more than one chart associated with a spreadsheet.

Click on View and drag down to Gridlines to cut the gridlines off.

Size and arrange the information so that it all fits on one page and print the document.

Be sure to preview first!

SAMPLE QUESTIONS FOR SORTING AND FILTERING A DATABASE

Because the content of your database will vary, these questions may need to be adjusted to fit your needs.

Sorting Questions

1. If you were diabetic, what would be the best fruit for you to eat? Why?
2. Your grandmother needs to decrease her sodium intake. Which canned soup should she have for lunch?
3. You are on the school track team and need to eat a diet high in carbohydrates. Which vegetable should you have for lunch?

Sorting for Range, Median, and Mode

Students can use the calculator under the Apple on the Macintosh to help them answer math questions.

4. What is the range of fat content in grams for all the foods listed in your database?
5. What is the mode for the field named Serv Size?
6. What is the average number of calories for all the spaghetti sauce in your database?

Filtering Questions

7. You need to eat a diet high in carbohydrates but low in sugar. Which foods would give you more than 20 grams of carbohydrates but also have less than 10 grams of sugar? How did you find your answer?
8. You are very hungry but you need to watch the number of fat grams that you eat. Which cereal would give a serving size of more than 30 grams and have less than 1 gram of fat?

Combination Filtering and Sorting

9. You can choose only one snack. Of those with no more than 200 mgs of sodium, which one is lowest in calories?
10. Of all the foods in your database, which one with less than 150 calories has the most protein?

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Activities

Pigs and Wolf on a Map!

Materials/resources

- *The True Story of The 3 Little Pigs by A. Wolf by Jon Scieszka.*
- *The Three Little Pigs (Original Version)*
- Each student will need paper and pencil.
- A copy of a Double Bubble Map from Thinking Maps, or a Venn Diagram (available [here](#)), for each student.

Technology resources

Each student will need access to a computer with a color monitor.

Day 1:

1. Read aloud the original version of *The Three Little Pigs*.
2. Discuss characters, setting, point of view, climax and resolution.
3. Ask students if they think it would be interesting if the wolf could tell his version of this story.
4. Read aloud *The True Story of the Three Little Pigs by A. Wolf by Jon Scieszka*.
5. Again discuss characters, setting, point of view, climax and resolution.
6. Ask students the definition of compare and contrast.
7. Ask students what graphic organizer we can use to compare and contrast the two books we just read.
8. Draw a Double Bubble Map (Venn Diagram) on the chalkboard. Lead a class discussion of similarities and differences in the two books.
9. Have students give examples of similarities and differences and the correct placement on the map.
10. Give each student a copy of a Double Bubble Map (Venn Diagram) and instruct them to use the data on the chalkboard to complete their map. In addition they are to put at least 2 new examples in each area of the map.
11. Assign each student a computer with Thinking Maps software and have them create a Double Bubble Map (Venn Diagram) using their rough draft.
12. Have students print the final copy.

Day 2: Telling the story from a different point of view.

1. In small groups, have students select a familiar fairytale picture book to read. Each group will fill out another bubble map for the familiar fairytale. Then students will retell the story from the point of view of a character other than the hero or heroine. For example, the witch in *Hansel and Gretel*, the huntsman in *Snow White*, the giant in *Jack and the Beanstalk*.
2. Have students fill out another Double Bubble Map (Venn Diagram) showing how their story is different when it is told by a different character.
3. Have students share their stories with their group, or publish as a class book of "Untold Fairytales".
4. As a class, discuss how the story changes when told from a different point of view.

<http://www.learnnc.org/lessons/CherryRandall2112003943>

Author: Cherry Randall

Connections

Computer Technology Skills

Grade 4

Objective 2.03: Identify, discuss, and use the spreadsheet terms/concepts (e.g., cell, column, row, values, labels, graph, formula). Strand - Spreadsheet

Objective 2.04: Enter/edit data in prepared spreadsheets to perform calculations using simple formulas (+, -, *, /) and observe the changes that occur. Spread – Spreadsheet

Activities

Materials/resources

- nutritional labels from several types of food
- menu planning sheet
- pencils

Technology resources

- spreadsheet program such as AppleWorks, ClarisWorks, or Microsoft Excel
- computer lab
- classroom computers
- internet access

Spreadsheets for dinner

1. Together, teacher and students will visit nutrition websites to determine the effect fats, carbohydrates, cholesterol, sodium, and proteins have on your body. The class will discuss that fats should be moderate and cholesterol should be avoided.
2. Students will be given the task of planning a dinner menu. They will be provided with nutritional guidelines such as how much protein their dinner must have and what their cholesterol limit should be. The teacher will model on the board the sort of information the students will be required to look for and what they will have to write down.
3. In groups, students will be given a menu planner and nutritional labels from several types of foods. The groups will have to plan a dinner that will stay within the nutritional guidelines they have been given.
4. When they are finished planning their meal, students will go to the computer and create a spreadsheet that has columns for food, protein, carbohydrate, fat, cholesterol, sodium, and a row for the totals. Students will add up the columns to show that they stayed within the guidelines.

<http://www.learnnc.org/lessons/LaurieMyers5232002713>

Author: Laurie Myers

Connections

Computer Technology Skills

Grade 4

Objective 2.01: Sort and search/filter a prepared content area database for information and use correct terms/concepts to explain strategies used as a class activity. Strand – Database

Activities

Activity 1:

2 hours

1. Explain to the students the major outer components of trees (canopy, trunk, leaves, branches, bark) and how to recognize them. Tell them that they will be working with a partner to choose a tree from the forest to name and call their own. They will take observations of this tree. Sketch it, and measure its approximate height and canopy width.
2. Develop a sheet with the students before they leave to determine what types of things they should observe about their tree (i.e. shape, size, bark texture and color, leaf shape and color, nuts, fruits, berries or flowers, roots evident, etc.). Folding a plain sheet of paper into sixteen squares and labeling each will help them organize their data, even if they do not collect sixteen observations.
3. Then explain to them how to take an approximate measurement of a tree's height. They should hold a ruler in front of their face and close one eye. They stand in front of the tree and continually walk backwards until their ruler looks the same size as the tree. At that point they take the meter stick and measure the distance on the ground from the point where they stand to the base of the tree. This is the approximate height of the tree.
4. Then explain to them how to approximate the canopy width. One partner should stand directly underneath the end of one side of the canopy. The other partner stands at the other end. Then one partner takes the meter stick and measures the distance on the ground from the point where they stand to their partner's place. This is the approximate canopy width.
5. Make sure each group has a ruler, meter stick, piece of yarn and note card to tie on the tree with its name, observation sheet and pencil. Remind them at this point of everything that they should be doing: taking observations, making a sketch, naming it, measuring its height and canopy width.
6. Now take them outside and give them thirty minutes to complete their activity. It may take longer, however, this can be a starting point. This requires you to trust your students and send them out alone in the forest. Try to create boundaries so that they are within a close enough distance that you can get to them quickly.

7. Once they have finished and you have returned inside, allow them to analyze their data by sharing with the class. Were any of the trees alike? What similarities and differences did they notice between their trees? This will easily lead into activity number three in which they will learn about the differences between pines and deciduous trees and how to identify them using bark and leaves.

Activity 2:

1–2 hours

1. Begin this lesson by having them review the observations they took and the sketch they drew in the previous lesson.
2. Tell them that they will be writing a short story that introduces their tree to the reader. Since their tree has a name it should also have a personality that goes along with its looks!
3. As a class, brainstorm a list of adjectives that will help them be detailed in their story.
4. Give them fifteen to twenty minutes to write the story.
5. When they finish have them edit for errors and then copy to a clean sheet. You can display their clean copies and sketches on a bulletin board.
6. As an extension you may send them on a scavenger hunt to look for another pair's selected tree in the forest by using their observations or essay as a guide.
7. Another extension would be to have them share their stories with the class and have peers give comments or suggestions to help them with their narrative writing.

Activity 3:

1¹/₂–2 days

1. Begin with a review of the discussion you had in lesson one about why their tree observations were similar and different. Suggest to them that there are two main groups of trees that every species fits into, deciduous and evergreen (including pines, which are the focus of this lesson). Explain the differences between evergreen and deciduous trees and then ask them to determine which family their tree fits into.
2. Then tell them that they will be learning more about specific pine and deciduous forest characteristics today on the computer.
3. Take them to the area where the computers are located and have them log on to the first site listed below. They will have to complete the pine trees activity first and then move onto the deciduous forest activity.
4. They will need instruction as to what to do at each site. This activity works like a webquest in that they have to gather particular information from various sites and then record it on their teacher prepared data sheets.
5. Once they have finished discuss with them as a class what they have learned from the webquest. Make a list as a class of the important information and then develop

a quiz together to ensure they learn the information. Tell them that they will need to know this information for later tree identification.

Activity 4:

1. Begin by explaining to the students that they will be learning how to specifically identify a tree by using its bark and leaves. You will need to have several tree identification guides available for them to use.
2. Tell them to take out their observations from activity 1. By looking at the observations they have recorded about bark texture and look and leaf shape and color they can determine the species of their tree.
3. Give them about fifteen minutes with their partner to flip through the book and decide what species their tree is. You may need to take them to the forest again and allow them to match their actual tree to the pictures in the book. Some of the information they learned in the computer lab with the webquest will help them to determine this.
4. Once they have determined their species have them share it with the class. Be sure to ask them why they think it is that particular species and what clues they used to determine it.
5. As an extension to this activity you may go into the forest ahead of time and identify as many different species of trees as you can. Then give the students a list of those trees and see if they can work with a partner to identify them. You can do it as a scavenger hunt and give them points for each species they find. The winner will be the group who earns the most points. (If you think they will not be honest tell them that you will ask them specific traits of the different species when they return. They must know the answers to receive the points!)
6. Another extension that is possible would be to involve another class or grade level and allow your students to be the teachers. The first activity would be the most beneficial for them to do. You could have your students identify the tree they choose for them just so they would know.
7. Another extension would be to plant trees with your class around your school or somewhere in the community. (There are many associations that will donate trees to schools if you simply ask. One is the Arbor Society.) Then discuss with them what these trees will do for that environment. They can also take care of them and watch and observe as they grow.

<http://www.learnnc.org/lessons/AmyLuna2112003951>

Author: Amy Luna and Kathy Beck

