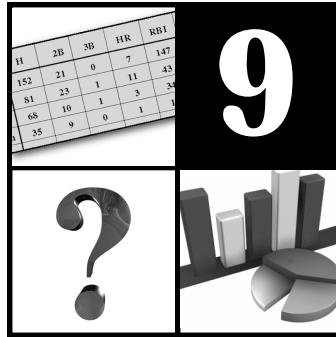


MODULE

so what



INTRODUCTION

The purpose of these culminating activities is to provide strategies for students and teachers to use the science knowledge and processes to interpret and analyze information presented regarding tobacco and tobacco use. Although there is a great deal in print, it is strongly recommended that you provide a way for students to access both the website and the CD-ROM. Students will be completing research projects that could be assigned on an individual basis, in pairs, or in groups. The resources provided for you on the website and CD-ROM encourage maximum variety of projects and different ways of presenting information.

Two activities make up this module:

Activity 21: Analyzing and Interpreting Information

Activity 22: Using Statistics to Learn About Science

ACTIVITY 21



analyzing and interpreting information

TEACHER BACKGROUND



BEFORE YOU BEGIN THIS ACTIVITY, READ THROUGH IT CAREFULLY TO DETERMINE HOW MUCH CLASS INSTRUCTION, DISCUSSION, AND PRE-ACTIVITY WORK YOU NEED TO DO. STUDENTS NEED TO BE FAMILIAR WITH THE INFORMATION AS WELL AS CREATING VENN DIAGRAMS AND COMPARISON CHARTS.

We often expect students to understand media reports about important issues like tobacco and tobacco use because we have exposed them to factual information. The messages that students are exposed to are from a variety of media – print (newspapers and magazines), electronic (e-mail and the internet), television, radio, and videos. According to Mastering the Message, a publication sponsored by the Newspaper Association of America Foundation, young people are frequently targeted by media because of their buying power. According to Consumer's Union, young people from ages 6-12 spend nearly

\$11 billion annually; children 13-17 spend \$57 billion of their own money and about \$36 billion of their parents' money. They influence the spending of over \$160 billion of their parents' money.

Most of the information that we get about our world is based on information supplied by the media. Using a variety of techniques, you can help your students become media literate. Media literacy involves analyzing, evaluating, and interpreting messages, as well as creating new messages. These are skills which are assessed by the FCAT and Terra Nova.

News reports

Reports, columns, and features found in newspapers inform, entertain, and persuade. Since students cannot control the content or the tone, they need strategies for analyzing and interpreting what they read. In this case, we are looking particularly at media treatment of tobacco-related issues. Following are guidelines for each type of news.

Informational news report:

- addresses the 5 W's and the H (who, what, when, where, why, and how)
- presents interesting details in an organized way
- identifies sources including name and qualifications
- supports the main idea with quotes
- supports the main idea with a summary of pertinent information
- includes commonly-used words to illustrate technical or subject-specific terms engages the reader with well-organized and interesting writing
- utilizes a consistent style

Entertaining article:

- addresses a specific audience
- supports the main idea in an interesting or entertaining way
- uses entertaining vocabulary
- presents an organized piece of writing in a creative way
- presents an unusual story

Persuasive writing:

- captures the reader's attention using persuasive words
- identifies a specific topic or idea
- includes strong arguments
- combines facts and personal opinion
- presents a well-organized chain of ideas

Advertisements

Advertising is persuasive writing that attempts to convince you to buy something or do something. In the case of tobacco products, advertising has been criticized for many reasons, not the least of which is that some advertisements

target young people. Cigarette advertising has been removed from television, billboards in some states, and car racing in certain countries. Cigarette ads contain messages other than those to get you to buy a product; they promote a behavior and imply a particular lifestyle.

Advertisements have certain identifiable features:

- captures your attention by presenting their product or activity in a desirable way
- presents information
- encourages you to take action (do what they want you to do)
- makes you feel positive about the product or activity

ACTIVITY INSTRUCTIONS

Materials



- Student page for menu of activities
- Various supplies for creating presentations
- Newspapers
- Magazines
- Videos
- Television ads
- News stories
- Science Notebook

Overview

You may decide to use the activities with the whole class or assign specific activities to certain groups, or students can choose from a menu of possible activities related to analyzing and interpreting media messages, or they can develop their own media stories. Specific ideas for activities are explained on the student page. Encourage students to create their own ways of demonstrating how media can present information in particular ways to evoke a desired response.

Homework, Assessment, and Standards

Homework

Have students bring in newspapers, magazines, tapes of news programs and advertisements.

As a culminating homework assignment, have students choose a style and write a news item or advertisement related to tobacco.

Assessment

After a class discussion of what the word “media” means, have students create a visual representation (see the section on graphic/visual organizers in the introductory materials) that depicts what they believe media represents.

Students write letters to the editor of the local newspaper to express their ideas and opinions on a tobacco-related topic (for ideas check the website and CD-ROM).

Standards

Florida State Sunshine Standards

Science: SC.H.1.2.1, SC.H.1.2.2, SC.H.1.2.3, SC.H.1.2.4, SC.H.3.2.2, SC.H.3.2.4,

Health: HE.A.1.2.2, HE.A.1.2.4, HE.A.2.2.1, HE.A.2.2.3, HE.A.2.2.4, HE.B.1.2.2, HE.B.1.2.4, HE.B.2.2.1, HE.B.2.2.2, HE.B.2.2.3, HE.B.2.2.4, HE.C.1.2.1, HE.C.1.2.2, HE.C.1.2.3, HE.C.2.2.1, HE.C.2.2.2, HE.C.2.2.4, HE.C.2.2.5, HE.C.2.2.6 HE.E.2.2.4

Mathematics: MA.B.1.2.2, MA.B.2.2.1, MA.B.4.2.1, MA.D.2.2.1, MA.E.1.2.1, MA.E.2.2.1, MA.E.2.2.2, MA.E.3.2.2

Language Arts: LA.A.2.2.1, LA.A.2.2.2, LA.A.2.2.3, LA.A.2.2.4, LA.A.2.2.5, LA.A.2.2.6, LA.A.2.2.7, LA.A.2.2.8, LA.B.1.2.1, LA.B.1.2.3, LA.B.2.2.1, LA.B.2.2.2, LA.B.2.2.3, LA.B.2.2.4, LA.B.2.2.6, LA.C.1.2.2, LA.C.2.2.1, LA.C.2.2.2, LA.D.2.2.1, LA.D.2.2.2, LA.D.2.2.3, LA.D.2.2.4, LA.D.2.2.5, LA.E.1.2.1, LA.E.1.2.2, LA.E.1.2.3, LA.E.1.2.4, LA.E.2.2.1, LA.E.2.2.2, LA.E.2.2.3, LA.E.2.2.4, LA.E.2.2.5

Social Studies: SS.A.3.2.1, SS.D.1.2.1, SS.D.2.2.2

Foreign Languages: FL.B.1.2.3

Theatre: TH.E.1.2.1

Visual Arts: VA.C.1.2.2

National Science Content Standards: A, C, F, & G

Check for elements of persuasive writing (see Background Material for this Activity).

Check student assignments (that they have chosen from the Student Page) for the elements of each type of writing piece. Answers should reflect student understanding of different types of writing, and how those types influence how we think and act on controversial issues.

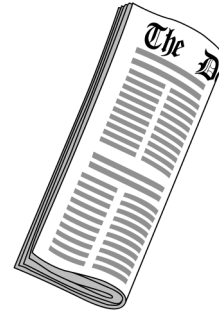
Have students read newspaper articles and cut out an example of informational writing, persuasive writing, and writing for entertainment. Each should be clearly identified and students should be able to defend their choices.

On the website, students will find an activity on interpreting what they read in the newspaper about tobacco. Have students complete the activity online and send their responses to share with other students. Periodically they can check the website for reactions to what they have posted.

Extensions

Have students create their own newspaper using a computer publishing program. As students decide what types of articles they need to make their publication a realistic one, check to see that all are represented: feature articles, sports, news reports, advertisements, entertainment, etc. You may want to have the newspaper devoted to one subject (for example, tobacco), and send it home to parents as an example of how interpreting what is written about health and science issues can influence our lives.

Research a famous journalist or style of reporting that influenced world events. For example, William Randolph Hearst's claim that he could "start a war" by publishing certain kinds of articles meant to inflame and incite public opinion.



Have students research controversial events or reporting that is so influential that we remember the words after many years. For example, the headline that proclaimed that Dewey won the 1948 election when, in fact, Harry Truman won. This premature reporting has set a standard for the media that is followed today. Students could take a trip to the public library or a university library to look at the actual newspapers or could search the worldwide web for historical headlines.

Students identify an issue that has become important because it is in the news. The use of Joe Camel, for example, as being a cartoon-like character that appeals to young people, received a lot of attention. Because of this, the issue was more in the minds of the public than it otherwise might have been. What other issues can students identify? Many environmental issues also are among the "big issues" of our times because of the media attention that they receive.

Have students analyze political cartoons, either current, historical, or both. Discuss how this media can be used to express opinions or create public awareness of issues. Have students identify the main idea, give their opinion of the issue, and state whether they think this is an effective use of media. You may wish to have one cartoon that the whole class analyzes before asking students to do this on their own. Also, you may wish to further extend the activity by having students identify an issue and create their own cartoons.

Read aloud The True Story of the 3 Little Pigs by Jon Scieszka (ISBN 0-590-45495-1). In this account of the original 3 little pigs story, the wolf claims that the media misrepresented his actions. This is his version of what happened and how he was framed!

SO WHAT? ANALYZING AND INTERPRETING INFORMATION



Most of the information that we get about our world is based on what we read in newspapers and magazines, hear on the radio and see on television. You are the focus of media attention because of your “buying power.” Young people from the ages of 6 to 12 spend nearly \$11 billion each year. Children between the ages of 13 and 17 spend \$57 billion of their own money and about \$36 billion of their parents’ money. It is important that you become a good consumer of information, just like you would be a good consumer of other things that you buy, like clothes, CDs, or games and toys.

For this activity, you will choose one or more of the following ways to look at different media. Your teacher will tell you how many of the activities you need to complete. You will probably need a newspaper and magazine. You will also need to watch television advertising and/or a television news program or listen to radio advertising and/or a radio news program. **BE CAREFUL: A NEWS PROGRAM IS NOT A TALK SHOW (LIKE OPRAH WINFREY OR ROSIE O’DONNELL) AND IS NOT A NEWS MAGAZINE SHOW (LIKE DATELINE OR 20/20).** This means you will have to pay attention to schedules. For example, local news programs generally air at 6:00 p.m. and again at 11:00 p.m. National news programs come on directly following local news. In addition, CNN is a 24-hour news channel that is available in most areas, and local and regional newspapers (foreign ones, too) are usually online (on the worldwide web).

1. Create a Venn diagram that compares advertising and persuasive writing. This particular diagram will have only two circles. If you prefer, you can add a circle and compare the three types of writing: informational, persuasive, and entertainment. Use at least two examples of each type of writing to make your comparisons.

ACTIVITY **21** analysing and interpreting informationing

2. You will need to take home a stopwatch for this activity, and you will need some help to videotape one news program. Select two network national news programs. List the stories they covered in order, and time how long each story was on the air. List sources that were used to support the reports (for example, a White House source, a scientist or researcher talking about medical issues, a tobacco executive interviewed about a product). Prepare a chart to compare the two programs. Write about how the programs were similar and how they were different. Be sure to include advertising time and placement.

3. Choose either a newspaper, magazine, or radio or television program. You will be writing a review to share with the class. Include in your review the following:

- the name of the newspaper, etc.
- where you can get it (for example, on channel 27 or at the grocery store)
- a description (what is it; how is it set up; etc.)
- a list of the good things about it
- a list of characteristics that are not (in your opinion) very good
- your recommendation for others

4. Look at the advertising in your local newspaper. Choose one product and find all the ads that you can in one newspaper (or magazine). Answer the following:

- What audience are these ads for?
- How does the company interest that audience?
- What age group are the ads for?
- Would this ad be used in any community or just yours?
- Would you buy the product? Why or why not?

5. Write a letter to the editor of your local newspaper. Choose an issue that you feel strongly about (you can check the website for ideas). For example, a local environmental issue about an endangered animal or construction project that will mean cutting down a lot of trees; respond to a person that has made comments in the newspaper that you do not agree with; a change in the comics that your local newspaper is carrying.

ACTIVITY 21 analyzing and interpreting information

6. Look closely at political advertising. Create a chart that includes the following and use it to analyze at least three political advertisements.

- What are the words?
- What is the candidate really saying?
- What group are the ads for?
- How can you check if what the candidate is saying is true?
- What are the main issues the candidate supports or is concerned with?
- What sources are given?

7. Choose a book that you are reading (or one that your teacher is reading aloud to the class) and write a news story that is related to the plot. Keep in mind the 5 W's and the H (who, what, when, where, why, and how). Clearly identify your audience and remember to include sources (your sources could be characters in the book, the author, etc.). This is, of course, not real, so you can really have fun with it!!

8. Get a copy of a newspaper or magazine from another country. Compare it with a local or regional newspaper or magazine. Look for the number of news stories, feature stories, or advertisements. What elements do the newspapers have in common? (For example, do they both have a weather section in a noticeable place?) Find a way to present this material to the class to show others the likenesses and differences.

9. Keep a record of how much and what kind of media that you use in a week. Find a way to share this information with others in your class. One way that you may choose to do this is to make a list of websites you visit, newspaper (or articles) that you look at, magazines, television shows (this includes advertising of course), radio programs (this also includes advertising).

- How many different kinds of media do you use in a week? In a day? In a month and in a year?
- What does this tell you about how media influences your life?
- In what ways does the media influence what you do? What you buy?
- Does the media influence how you dress? In what way(s)?

ACTIVITY 22



using statistics to learn about science

TEACHER BACKGROUND

Science as inquiry is a phrase that is used more and more when we talk about science instruction in the elementary classroom. However, its meaning is sometimes misunderstood as we try to “do” science as inquiry in the classroom as something that is unnatural or brand new. Simply put, science as inquiry involves asking questions and formulating a plan to answer those questions. Process skills necessary to doing inquiry-based science are recognizing, analyzing and interpreting information.

This activity is designed to introduce students to information collected and displayed in particular ways. Using the information to distinguish between explanation and evidence, students will begin to become more responsible consumers of information. Seeing and using information that is presented in various ways is necessary in the process of doing science. This activity is another way for you to integrate mathematics with science; it is a rationale for integrating science with mathematics.

Evidence: The data on which a judgement or conclusion is based (The American Heritage, Second College Edition, 1982).

Explanation: To offer reasons for or causes of; to justify (The American Heritage, Second College Edition, 1982).

Explanations are sometimes based on evidence. It is this sort of explanation that we want students to be able to identify. Sometimes the evidence does not support the explanation; we want students to be able to identify these instances as well.

ACTIVITY INSTRUCTIONS

Materials



CD ROM
Statistics information/tables/charts
from Website
Science Notebooks

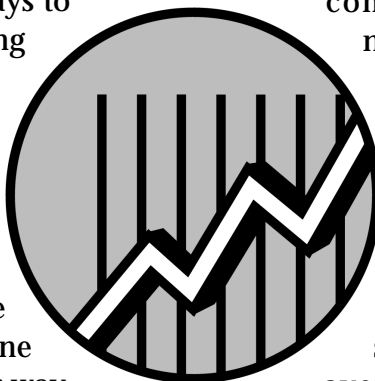
Overview

Students will be using lists, charts, graphs, and tables that present statistical information about tobacco-related issues to ask and answer questions. Although the activity appears to be a simple one, interpreting statistics is not as simple as it would appear. Students should be encouraged to find examples in newspapers, magazines, or on television of statistics being used as proof of a statement or as support for an idea or opinion. There are many ways to interpret numbers depending upon one’s perspective and this point should not be overlooked when discussing numbers and their use with students.

Students could take information presented in one way and express it in another way.

For example, students can demonstrate to you that they can take information from a table and express it as a graph. Although many of the activities in this curriculum have incorporated this skill, this is an opportunity to explicitly address using numbers to understand and interpret science concepts. Expressing data in graphs is also a skill that is assessed by the FCAT.

You can find tables, charts, graphs, and statistical information in the Tobacco and You section of the Website and also in the Virtual Lab section.



Homework, Assessment, and Standards

Homework

Over a period of about a week, have students use a variety of media to investigate the use of statistics. Students will find examples of how statistics are used to support or defend facts, ideas, or opinions. By collecting examples from newspapers, magazines, radio, and television, students will be reinforcing the power of the media, as well as finding common ways of using numbers.

Have students keep a diary of every time they hear statistics being used. Some examples might include a principal announcing that the school scored above the state average on a particular test, when some students discuss sports and talk about a person’s batting average or free throw shooting percentage. Use of statistical information is more common than students realize. These assignments will help point that out.

Assessment

Check student homework for statistics used in media samples that they brought to class. For example, a newspaper article that states that 25% of the registered voters in a county voted in a local election demonstrates the use of statistics. However, if the article says that in a county of 150,000, most of the registered voters participated, this would not be statistical information.

Check that student Science Notebooks or CD-ROM Lab Notebooks contain questions that relate directly to the statistical information that they chose to work with. In addition, check that the answers require distinguishing between evidence and explanation.

Have students write a report on a subject of particular interest to them. Ideas, statements, or opinions in the report should be supported by statistical evidence. Students should be able to clearly identify that evidence.

Extensions

Read and discuss Math Curse by Jon Scieszka and Lane Smith (ISBN 0-670-86194-4). It presents different ways of looking at numbers and number problems.

Read The Librarian Who Measured the Earth by Kathryn Lasky (ISBN 0-316-51526-4). This is a good example of using numbers to understand a concept too big to observe.

Have students (individually, in pairs or in groups) identify class or school statistics that would be interesting to collect. Students start with a question and determine what information they would need to answer that question. For example, percentage of boys and/or girls that play certain sports, that take music lessons, that attend certain events, that like/dislike certain foods, that are fans of certain sports teams. Rather than just a listing, encourage students to have several

categories of information and then express the numbers in a variety of ways, i.e., percentages, decimals, etc. Have students determine not only how they will display this data, but how the data will be used. What will be done with the information once it is collected?

Standards

Florida Sunshine State Standards

Science: SC.E.1.2.1, SC.E.1.2.4, SC.E.1.2.5, SC.H. 1.2.1, SC.H.1.2.2, SC.H.1.2.3, SC.H.1.2.4, SC.H.1.2.5, SC.H.2.2.1, SC.H.3.2.2, SC.H.3.2.4

Health: HE.A.1.2.2, HE.A.1.2.6, HE.A.2.2.1, HE.A.2.2.2, HE.A.2.2.3, HE.A.2.2.4, HE.B.1.2.2, HE.B.2.2.1, HE.B.2.2.2, HE.B.2.2.3, HE.B.2.2.4, HE.C.1.2.1, HE.C.1.2.2, HE.C.1.2.3, HE.C.2.2.1, HE.C.2.2.2, HE.C.2.2.3, HE.C.2.2.4

Mathematics: MA.A.1.2.3, MA.A.1.2.4, MA.A.2.2.1, MA.B.1.2.1, MA.B.1.2.2, MA.B.2.2.1, MA.B.2.2.2, MA.B.4.2.1, MA.D.1.2.1, MA.D.1.2.2, MA.D.2.2.1, MA.D.2.2.2, MA.E.1.2.1, MA.E.1.2.2, MA.E.1.2.3, MA.E.2.2.1, MA.E.2.2.2, MA.E.3.2.1, MA.E.3.2.2

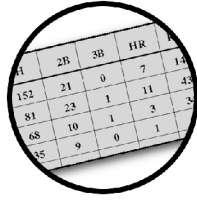
Language Arts: LA.A.2.2.1, LA.A.2.2.2, LA.A.2.2.3, LA.A.2.2.5, LA.A.2.2.6, LA.A.2.2.7, LA.A.2.2.8, LA.B.1.2.1, LA.B.2.2.1, LA.B.2.2.2, LA.B.2.2.3, LA.B.2.2.4, LA.B.2.2.6, LA.C.3.2.3, LA.C.3.2.5, LA.D.2.2.3, LA.D.2.2.5, LA.E.2.2.3, LA.E.2.2.4, LA.E.2.2.5

Social Studies: SS.A.2.2.1

Theatre: TH.E.1.2.1

National Science Content Standards: A, C, D, F, & G

SO WHAT? USING STATISTICS TO LEARN ABOUT SCIENCE



Sometimes numbers are used to support a statement, claim, idea, or opinion. Collections of numbers that are organized and are from a certain category are called statistics. For example, information gathered about the number of students in your class who play soccer can be organized into categories, such as “boys and girls” or “ages.” These are called classroom statistics. The number and age of people that use tobacco products and the types of products they use could be used if you were writing an anti-tobacco message.

Different people can look at statistics in different ways. If I tell you that 15 percent of fourth and fifth graders like to read R. L. Stine books, you could use this to persuade your teacher that Goosebumps books are popular and should be included in a classroom library. On the other hand, if I were your teacher, I could say only 22 fourth and fifth grade students (of 150 in the school) read Goosebumps. So, I should not spend my money on those books for our class library!! Taking this even further, you could ask me, “When did you ask the students? Did you ask on a day when some students were on a fieldtrip?” “Which students did you ask? All of them or did you ask one class and just assume that all other classes would be the same?”

In this activity, you will be looking at statistics on the website and asking questions about the numbers. Answers to your questions should help you and a classmate understand something new about tobacco use.

1. Using the Tobacco and You and Virtual Laboratory sections of the website, identify some statistics that you will use for this activity. Choose about 10 statistics.

ACTIVITY 22 using statistics to learn about science

2. Create questions from the statistics you have chosen. Be sure that someone else can figure out the answer because you will be exchanging questions with someone in your class.

3. Once you have written and exchanged questions, check and compare answers and answer the following questions in your Science Notebook.

- Who could use the information that you have gathered?
- How could someone use this information?
- Could the information be used in different ways?

4. Write a news article, advertisement, or opinion piece (such as a letter to the editor or column) that uses the statistics you gathered off the website. Use the numbers to support or defend your position.

5. Answer the following questions in your Science Notebook after you have written your article.

- Do you think that using statistics helps convince people that you are smart?
- Do you think that someone reading your article will be convinced that you are a good source of information because you use statistics?
- How will what you have learned in this activity change the way you use newspaper or magazine articles?