

Teacher Tool 352: Think Like a Cartographer

Program Guide

Study Guide for Point to Point 9: Think Like a Cartographer

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Think Like a Cartographer

Expert: Melisa McLean, GIS Program Manager—St. Louis County

Targeted Grade Levels: This program can be targeted to the grade level you teach.

Availability: Program requests must be made at least two weeks prior to your desired date. This program can be scheduled Monday through Friday, between 8 am and 5 pm Central Time. When enrolling, please let us know possible dates and times you'd like to schedule your interaction.

Program Description:

Maps are amazing sources of information that help us better understand all sorts of fascinating aspects of our world. In this program, we investigate maps and map making and ask the big picture question, “How can maps help us solve problems?” Through the course of this energetic and interactive cross-curricular program, students get a chance to answer our big picture question for themselves and engage in activities related to maps while interacting with a cartographer/GIS professional.

The program's conversation will be guided entirely by the topics you wish the expert to address and the questions your students want answered. For example, if your students are elementary or middle school students who send topics and questions focusing on general map questions, then that will be the direction of your interaction; if your students are high school students wanting to focus on more specific aspects of the becoming a GIS professional, then that will be the direction of your interaction. Your topic preferences and advance questions are due to us no less than three days prior to your scheduled interaction.

Learn More At: <https://educate.today/videos/7289>

Program Objectives:

Participants will:

1. engage in critical and creative thinking
2. engage in interactive activities and discussion about maps and map making focused on important concepts such as legend, scale, latitude, longitude, and projection
3. interact with a professional whose work at the Saint Louis County GIS Service Center has her regularly researching with maps and creating new maps to answer questions posed by businesses, property owners, taxpayers, and other consumers

Program Format:

Introduction: An overview of the program’s theme and importance of maps and Geographic Information Systems will be presented along with an introduction by the expert about his or her background and work.

Body of the Program: The expert will walk students through a problem, such as where to best locate an ice cream store, by using an open source GIS website and software that is available for teacher and student use.

Conclusion: Wrap up of the program and a time for final questions and answers.

Cost and Payment: \$80—Payment may be made via credit card or school district purchase order. Payment must be received prior to the scheduled program date.

How To Connect for the Program:

1. Via h.323 Videoconference
2. Via Skype, Zoom, or other similar desktop videoconference software

When you enroll for the program, please let us know your preferred method of connection.

To Enroll: Enrollment can occur in any of the following ways:

1. Go to our web page for the promo video for this program on our Educate.Today website at <https://educate.today/videos/7289> and click on the Sign Up button to send us your enrollment information.
2. E-mail us at info@educate.today and put “Enrolling for Think Like a Cartographer“ in the title of the e-mail. Please include your contact information in the e-mail and at least three proposed dates and times for your interaction.

We will respond to either method of enrollment to finalize a scheduled date for your interaction, make sure you have all program preparatory materials, and handle technical details for your method of connection including test calls.

Cancellation Policy: Once a date and time has been scheduled for your interaction, you can cancel or reschedule without penalty within 24 hours. After 24 hours and up to 7 days before your scheduled program, we’ll refund 50% of your original fee. Within 7 days of the scheduled date, we do not offer a refund. Should an uncontrollable emergency occur (i.e.: snow day, etc.), we will work with you to reschedule the program for a new date and time but should that prove impossible, we will refund 50% of your original fee. Should our program expert or other circumstance force a cancellation on our end from your original date, we will work with you to reschedule the program for a new date and time that works for you, or we will refund your purchase in full.

Required Pre-Program Activities:

1. Send Us Topic Areas for Your Interaction:

If you have a preferred location and/or a preferred question/topic/area of focus you would like addressed in the map you and your students will make with Ms. McLean, please, if possible, send us that information with your enrollment request. If it’s not possible to send that information with your enrollment request, it is information we’ll seek from you as part of the confirmation we send once we receive your enrollment request.

2. Send Us Your Advance Questions for Your Interaction:

Work with students in advance of their interaction to determine up to the ten (10) most important questions you’d like to ask Ms. McLean during your program. Send these questions to us by completing the Think Like a Cartographer Worksheet document sent to you with preparatory materials for this program and also available on our Educate.Today website at <https://educate.today/videos/7289>. E-mail it to us at info@educate.today no less than three days prior to your scheduled interaction. Additional spontaneous questions will be encouraged during the program, but these questions will be used to organize the conversation.

Vocabulary:

Atlas - a book of maps or charts

Cartography - the science or practice of drawing maps

Choropleth - a thematic map in which areas are shaded or patterned in proportion to the measurement of the statistical variable being displayed on the map, such as population density or per-capita income

Latitude - the angular distance of a place north or south of the earth's equator, usually expressed in degrees and minutes

Legend - a part of a map that gives information useful in interpreting the map; title, compass rose, key and scale

Longitude - the angular distance of a place east or west of the meridian at Greenwich, England, usually expressed in degrees and minutes

Scale – shows the ratio of a distance on the map to the corresponding distance on the ground; part of the legend

Topography - the arrangement of the natural and artificial physical features of an area

Supplemental Resources:

There are numerous Internet resources with excellent map activities for you to consider using with your students. Some of them from National Geographic are included below:

1. Latitude/Longitude Puzzle
http://education.nationalgeographic.com/education/activity/latitudelongitude-puzzle/?ar_a=1
2. Investigating Map Projects
http://education.nationalgeographic.com/education/activity/investigating-map-projections/?ar_a=1
3. Make a landform map http://education.nationalgeographic.com/education/activity/mapping-landforms/?ar_a=1
4. Comparing Historical Maps
http://education.nationalgeographic.com/education/activity/comparing-historical-maps/?ar_a=1
5. Use the 5 W and How questions to create a geographic perspective of your school, classroom, etc. http://education.nationalgeographic.com/education/lesson/your-school-using-geographic-perspective/?ar_a=1

Post-Program Activity Suggestions:

1. Send a Thank You or Insight—Have students write a letter to Ms. McLean detailing insight the student gained from hearing her story, an appreciation for her participation, and/or another focus area of their choice. E-mail the letter to us at live@hectv.org or info@educate.today or mail the letter to us at Educate.Today@HEC-TV 3221 McKelvey Rd #106, Bridgeton, MO 63044.

Featured National Standards:

The following **Common Core Standards for English/Language Arts and Literacy in History/Social Studies, Science and Technical Subjects** are referenced in this program:

Grades 3-6 College and Career Readiness Anchor Standards for Reading

7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

Grades 3-6 College and Career Readiness Anchor Standards for Writing

6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.
7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

Grades 3-6 College and Career Readiness Anchor Standards for Speaking and Listening

1. 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.
2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.
4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

Grades 3-6 College and Career Readiness Anchor Standards for Language

6. Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.