PREDICTION, POINT OF VIEW & PERSUASION

HELPING 3RD GRADERS UNDERSTAND FORECASTER CHALLENGES
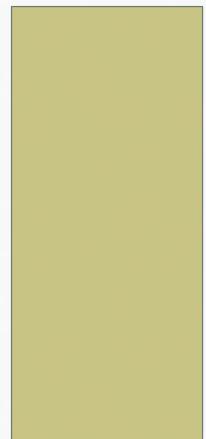
NATIONAL WEATHER SERVICE

Weather Warning Process

Models, satellite, radar, AWIPS, obs

Technical

NWS

Non-technical

Issue warning

Website & Radio

EMs

Broadcasters

Social Media

Different Publics
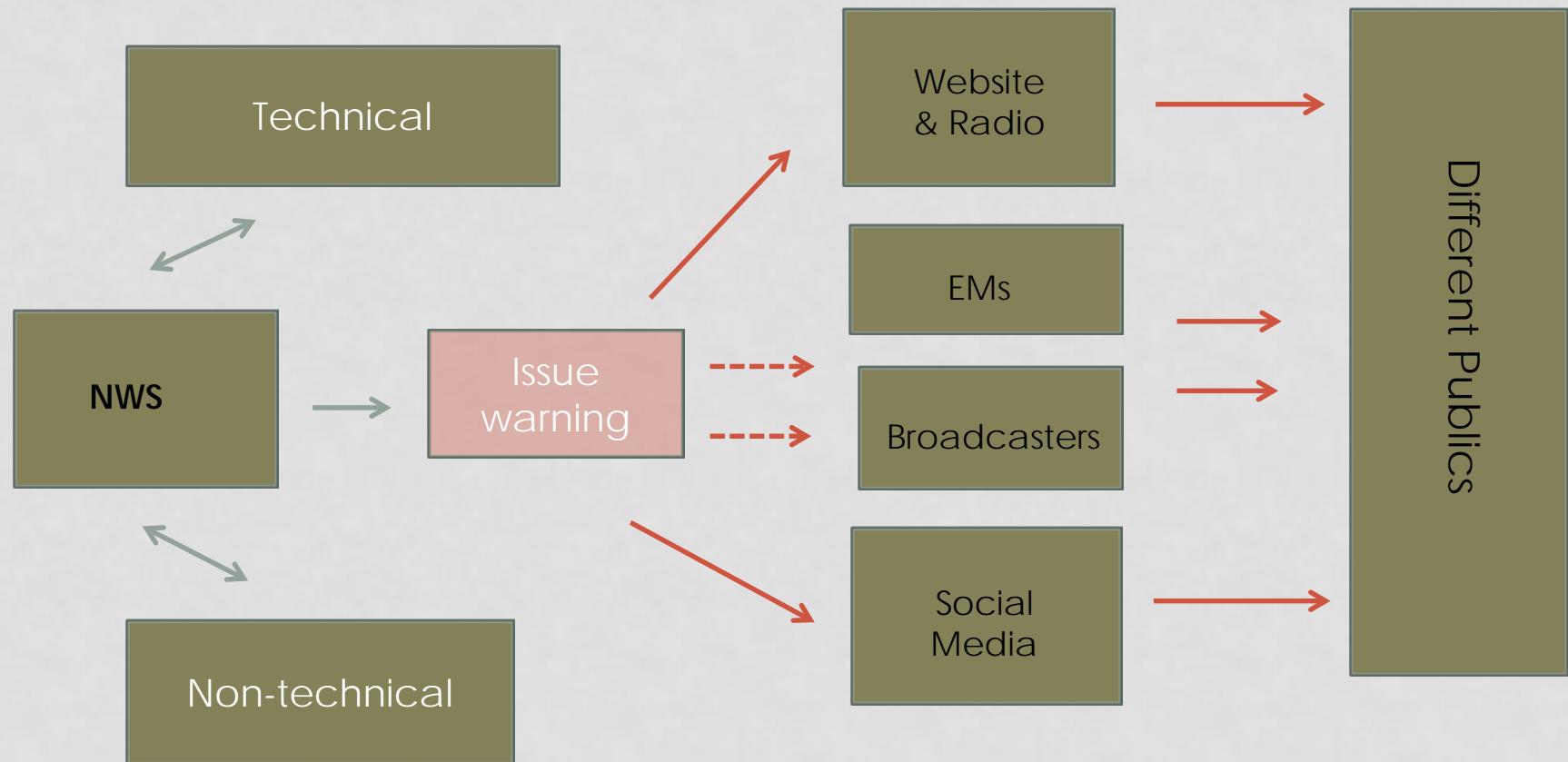
Spotters, experience, consensus, policies, office culture

Timescale varies hours to minutes

WISE PROJECT GOALS

- Connect to
  - underserved population
  - school serviced by local NWS
  - district & teacher needs or ideas
  - weather, risk, & society (social science)
  - technology (GIS)

FINDING A TEACHER / SCHOOL

- Met with RAL Directors & followed leads
- Coordinated with WISE mentor on teachers & volunteers
- Met with Boulder Outreach and Coordination Committee at NOAA & followed leads
- Emailed local school district science coordinators
- Met with UCAR Center for Science Education & followed leads
- Emailed with teachers & education coordinators

BURLINGTON 3RD GRADE

Mr. Sapir
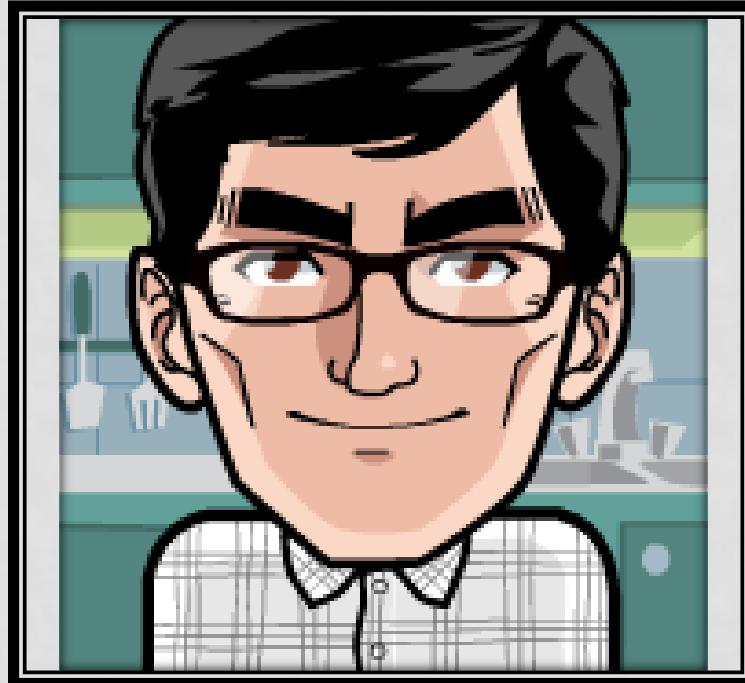
Mrs. Willden
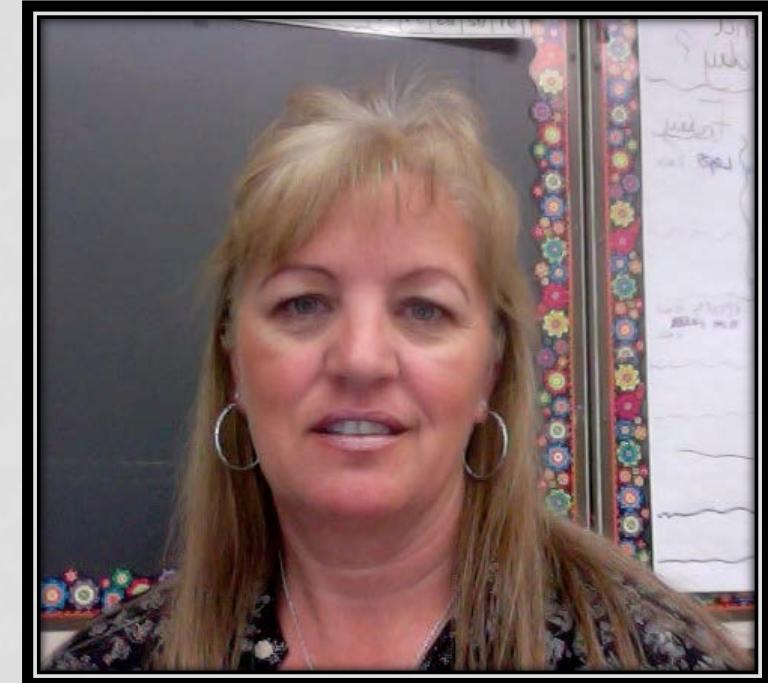
3ᴿᴰ GRADE STANDARDS

Science
Grade Level Expectations at a Glance

Standard	Grade Level Expectation
Third Grade	
1. Physical Science	1. Matter exists in different states such as solids, liquids, and gases and can change from one state to another by heating and cooling
2. Life Science	1. The duration and timing of life cycle events such as reproduction and longevity vary across organisms and species
3. Earth Science	1. Earth's materials can be broken down and/or combined into different materials such as rocks, minerals, rock cycle, formation of soil, and sand – some of which are usable resources for human activity

Explanations of prediction in terms of activity with melting ice

3RD GRADE STANDARDS

Third Grade Social Studies
Grade Level Expectations at a Glance

Standard	Grade Level Expectation		
Third Grade			
1. History	1. Use a variety of sources to distinguish historical fact from fiction.		
	2. People in the past influenced the development and interaction of different communities or regions.		
2. Geography	1. Use various types of geographic tools to develop spatial thinking.	➡	GIS
	2. The concept of regions is developed through an understanding of similarities and differences of places.		
3. Economics	1. Describe producers and consumers and how goods and services are exchanged.		
	2. Describe how to meet short-term financial goals (PFL).		
4. Civics	1. Respect the views and rights of others as components of a democratic society.	➡	Point of view
	2. Study the origins, structure, and functions of local government.		

CONNECT TO SOCIETY

Goals:

1) to understand prediction as a scientific concept in the context of weather

2) to view this term through different perspectives, such as parent / forecaster

3) to learn about persuasion & audience messages that help convince about prediction

4) to connect to spatial digital technologies

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LESSONS #1

Project shaped by

- Teacher and district technology limitations

- New SOL testing schedule & timing

- My knowledge of 3rd grade and lesson plans

- Grade of students & their age / experience

- Coordination with my advisor to travel

CLASS PREP

Which concepts students are most interested in.

Writing assignment: what they think each one is.

PREDICTION

What do you think is going to happen?

Why do you think that will happen? How do you know?
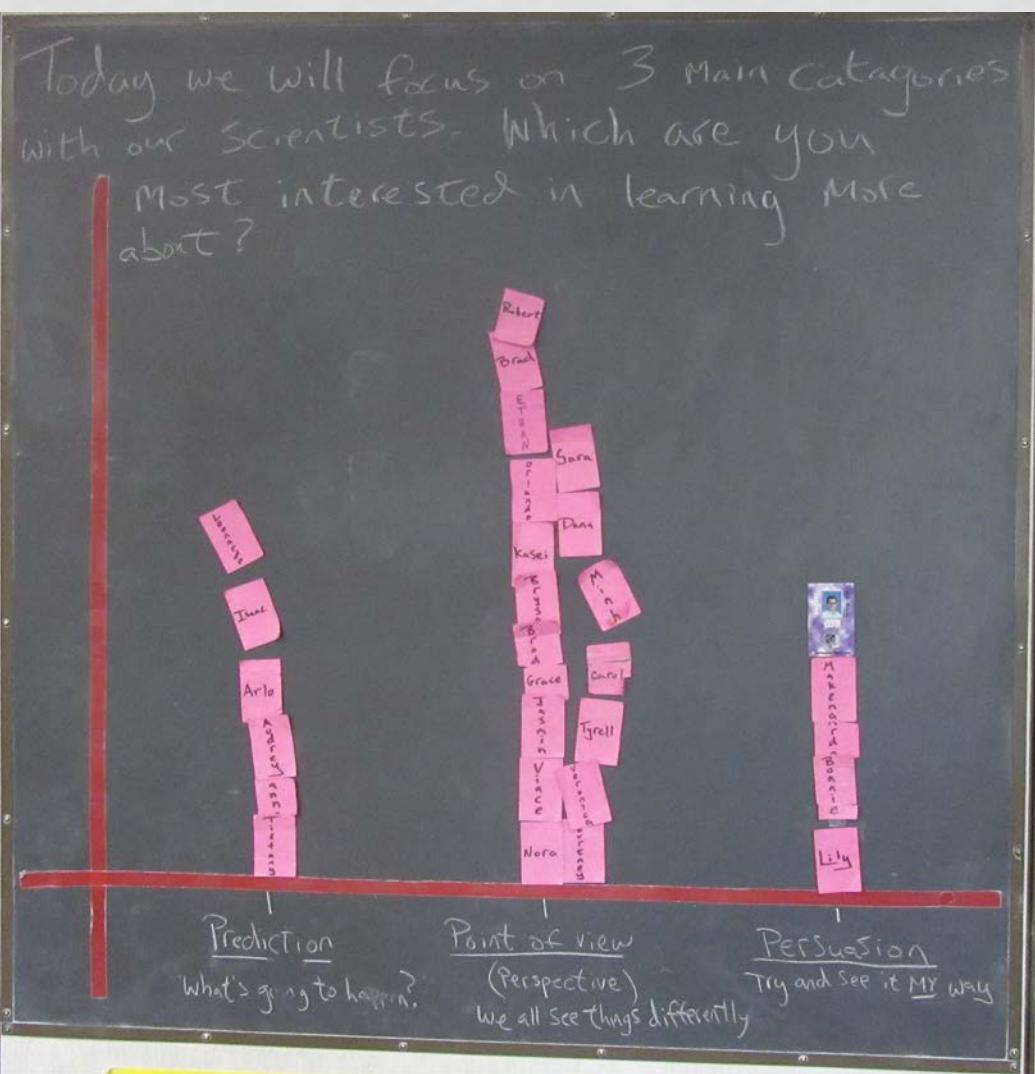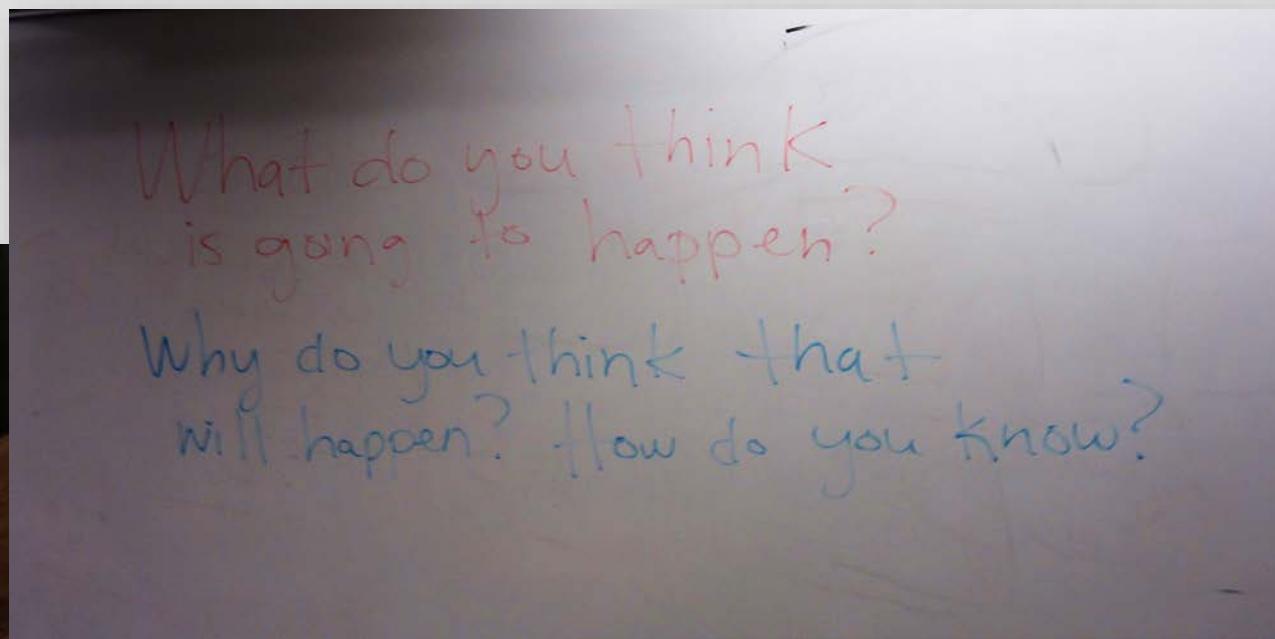
PREDICTION

Workshop, part 1 (9:00 to 9:25): The Nature of Prediction

Activity: 20 minutes

Bring in ice in a clear cup and leave it on the table in front of the class:

- What do you predict will happen to it? How do you know? What clues do you have?
- Talk about human (the janitor, the teacher, other students) and non-human (room temperature, bugs, change of states) interactions on the ice and the cup
- What is the relationship between the present, past, and future?
- How to make a prediction: pattern recognition, educated guesses, experience, scientific laws for nature, behavioral norms

POINT OF VIEW: ARTIST, PARENT, & FORECASTER

Directions for Point of View Activity

Workshop, part 2 (9:35 to 10:00): Learning Different Points of View on Prediction

Each expert answers each of the following about the weather / sky / environment today.

- In this particular role, what do they care most about? What are their greatest concerns / worries in this role?

- What do they see when they look at the weather today? What evidence do they draw on in the environment?

- What tools, instruments, or resources do they use to evaluate the weather in light of prediction?

- Why is their prediction important? How would they communicate their prediction and persuade those they care about to pay attention?

CONNECT POV TO PERSUASION

Images   Words   Numbers

Forecaster

Prediction / Warning
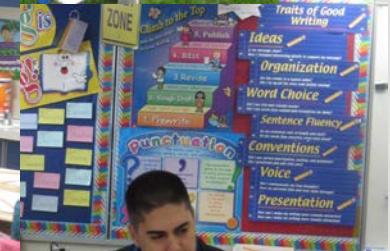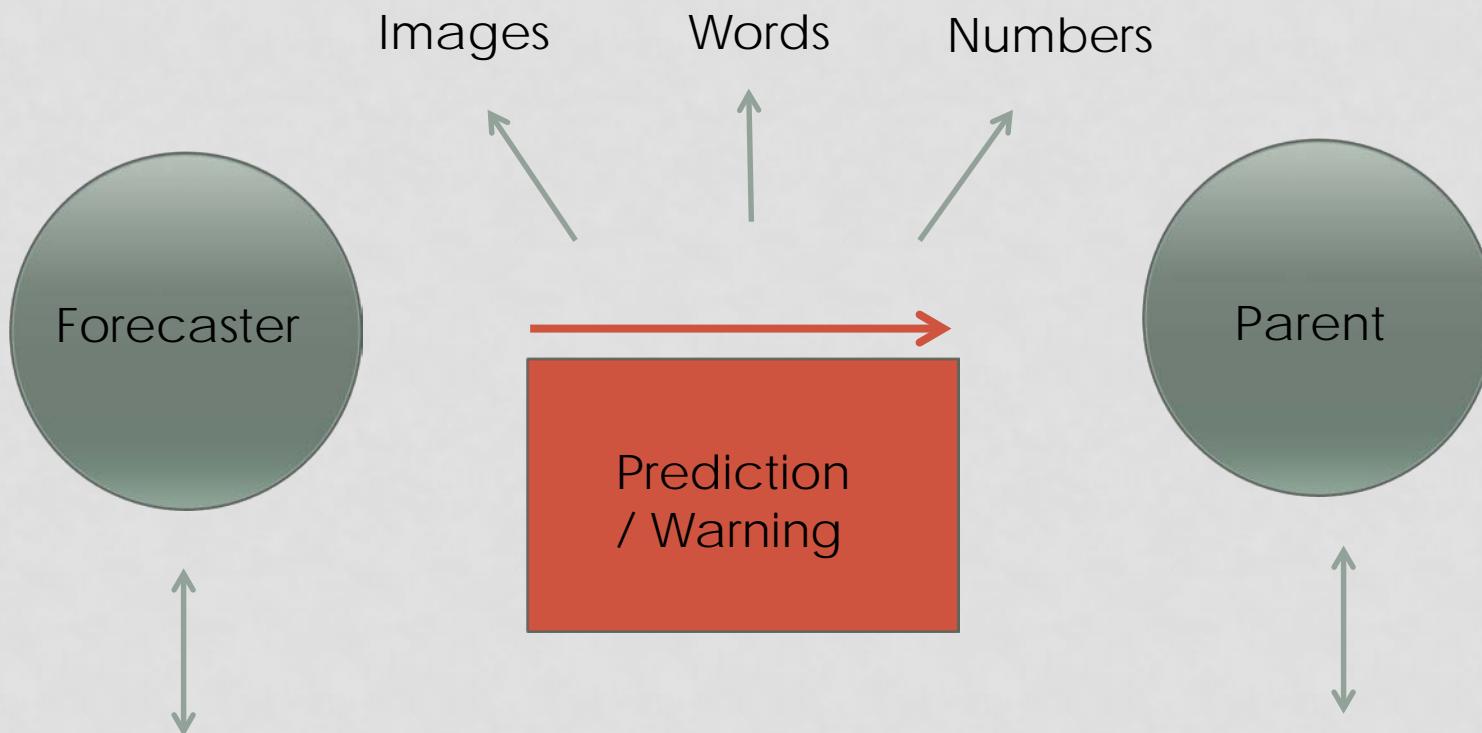
Parent

Cares about & Knows & Experiences

CONNECT POV TO PERSUASION
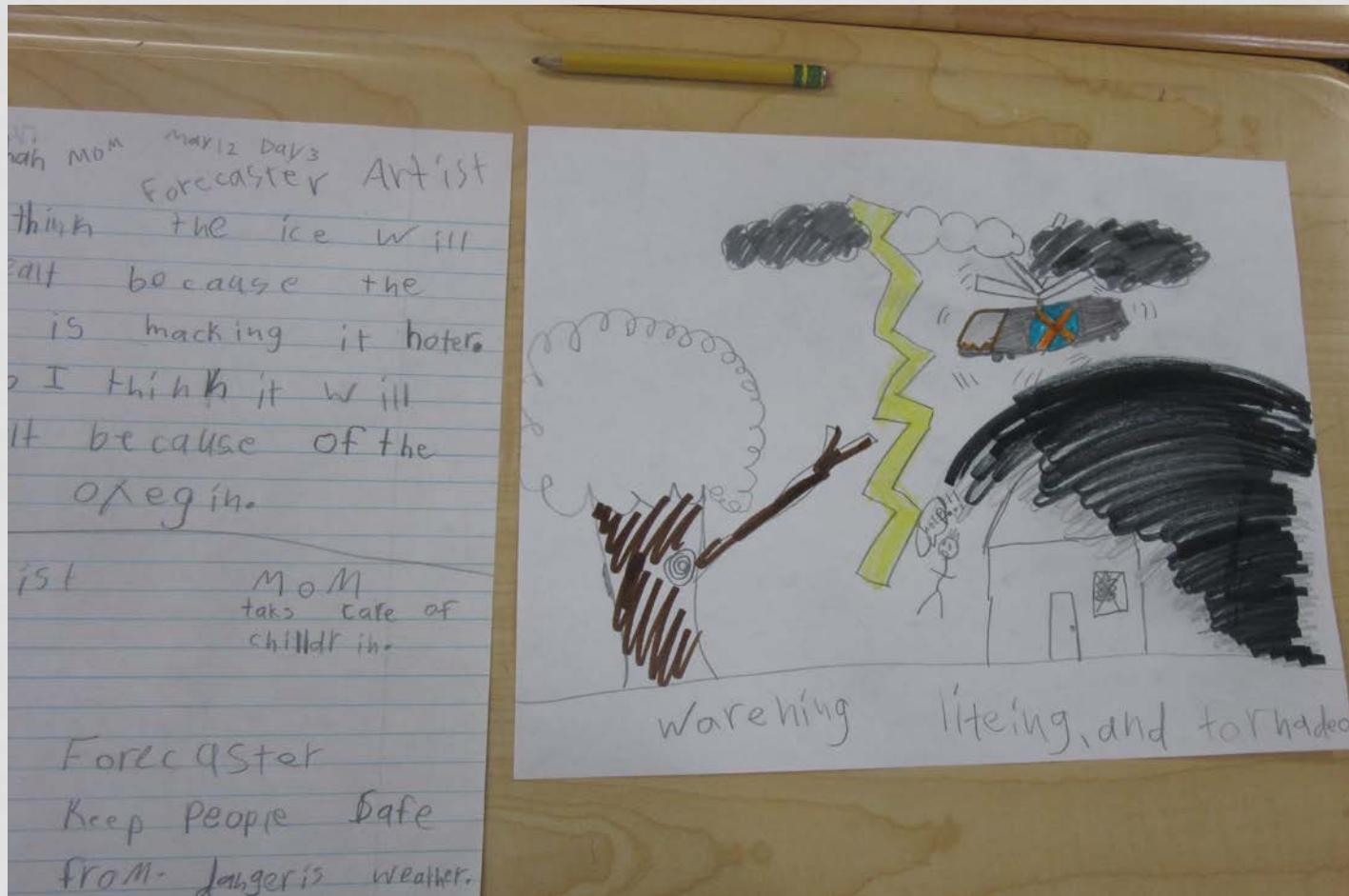
FORECASTER PERSUADES PARENT
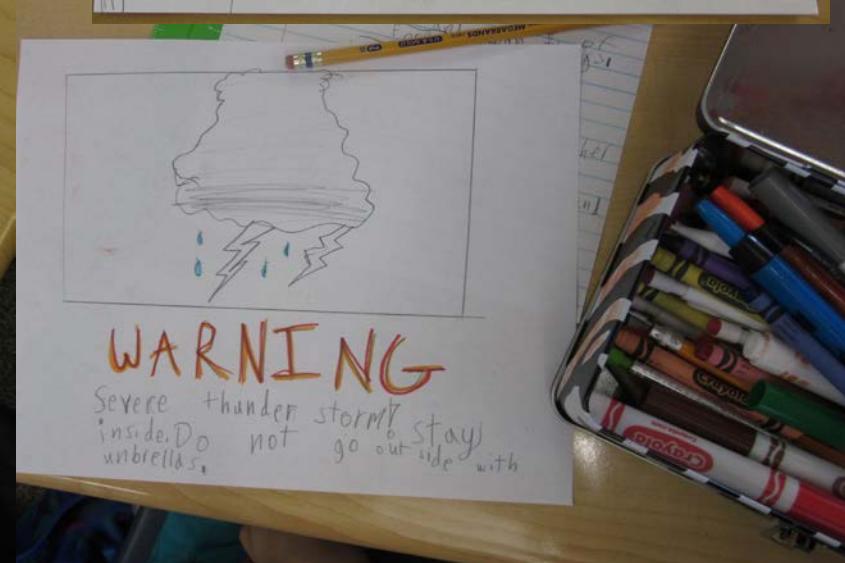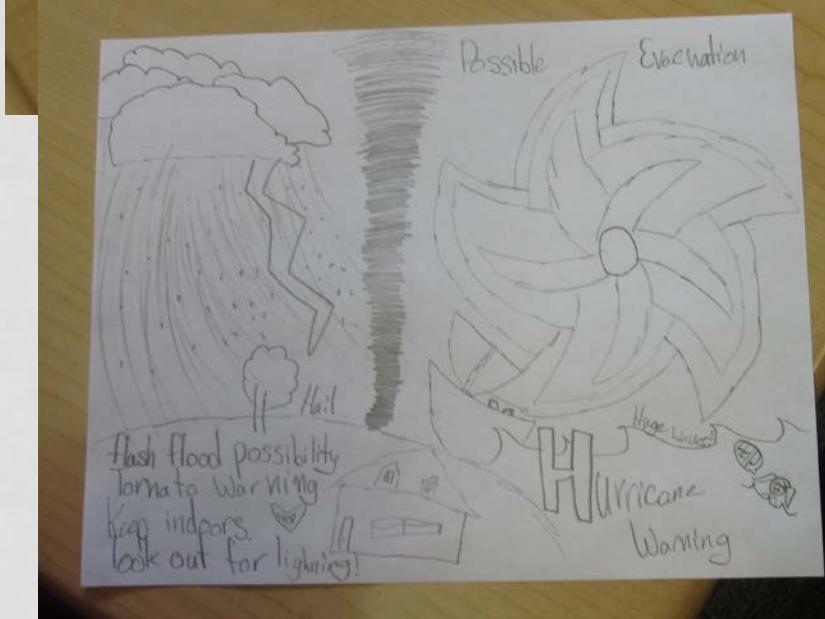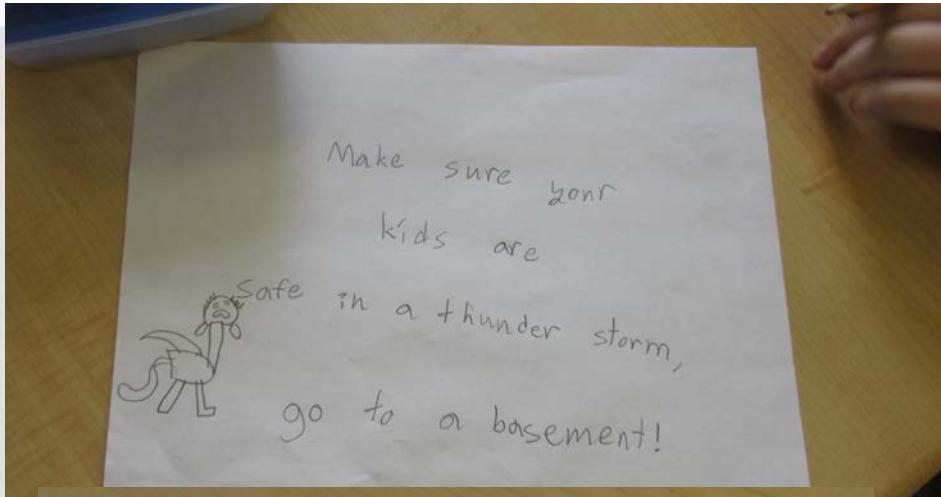
COCORAHS

LESSON #2

I learned

- Teachers are too overwhelmed to design w/ me
- To be flexible with students, timing, and activities
- Connect to writing / drawing & critical thinking
- Build on what students know & model activities
- Make connections across my expertise

NEXT STEPS: WISE 2.0

- Reconnect to GIS via Story Maps

- CoCoRaHS coordination & setup

- Develop version for Virginia schools

- NWA and AMS Conference Posters

UCAR

UCAR CENTER FOR SCIENCE **EDUCATION**

HOME   TEACHERS   STUDENTS   LEARNING ZONE   VISIT NCAR   BLOG   ABOUT

Weather Activities

CONSIDERING FLOOD RISK
Students analyze and interpret data on a map of floodplains to assess risk of flooding inform decision making that will mitigate the effects of flooding.

FLOOD CHANCES
Students test the hypothesis that a 100-year flood happens once every hundred years, learning how the probability of a flood does not mean that floods happen at regular intervals.

JIGSAW GROUP RESEARCH ON THE 2013 COLORADO FLOODS
Students research the 2013 Colorado floods, present the information they find, and summarize all information presented.

TRACKING HURRICANE NEWS
Students read news articles about Hurricane Irene, present information with classmates, and construct a timeline to describe the hurricane's story over time and across geographic area, exploring what happened, how people were affected, and how they reacted.

THANK YOU!