

Title of Session: K-20 Science Resources

Moderator: David Weksler

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Room: After School Online Room

BJB2: welcome to the K-20 Science discussion, everyone

BJB2: we usually start all the discussions in Tapped In with introductions

DavidWe waits for the first introduction

BJB2: please tell us where you are located, what you teach or hope to teach and what brings you to this discussion

StaffanyR: I am a preservice teacher at the University of Houston

DavidWe wonders how Staffany got her name

DavidWe: Thanks, though, Staffany

RobertAl: I teach high school chemistry I and II near Columbus, Ohio

StaffanyR: I plan on teaching 7th grade Texas History, this online discussion is a part of my profession dev for one of my technology classes

StewartK: I'm a science educator (biology, earth science, general) and I am currently working on my PhD in instructional design for online learning. I live on Long Island, NY, and this is my first time here.

CatherinBr: Am I in the Science tapped in now?

DavidWe: I'm David Weksler. I'm in New Jersey, near New York City. I am standing in for Jeff Cooper this evening. I work with teachers and help them learn more about math and science and online resources for those topics. I've been using Tapped In for the past 8 years

DavidWe: Yes, Catherine. You are right where you want to be

StaffanyR: I have no idea David on how my dad came up with my name

DavidWe smiles at Staffany

SusanR: K to 8 Occasional teacher from Canada

SusanR: and K to 3+ Great Resources facilitator

SusanR: here at TI

SusanR: and a big fan of David's

CatherinBr: I am a student at University of Houston. I am near my student teaching. I have a great professor who teaches us how to engage students in science.

StewartK: Hi Catherine, yes, science is NOT a spectator sport:)

BobGst17: history teacher 10, 11 grade, here observing for a technology class

DavidWe looks around

DavidWe: Anyone else?

CatherinBr: Last week, she taught us how to teach about simple machines by making bobble heads.

SusanR: bobble heads???

StaffanyR: Sounds interesting Catherine

CatherinBr: I'm only interested in K-2

DavidWe wonders if Catherine wants to explain a bit more

DavidWe nods

StewartK: Ahh, now I know why people call me simple

DavidWe smiles

DavidWe: So, folks, this is a bit of a "wing it" session. Our regular presenter for this session couldn't be here

SusanR: I am a dedicated grade one and two teacher, Catherine

DavidWe: I was a chemistry major, I've worked in a lab, I've cloned a gene, I've cooked in a restaurant, but I've been working with teachers over the past 13 years helping them learn how to use technology, software, computers, the Internet, whatever, to help the educational process

CatherinBr: We had to construct a bobble head which taught us about level. How to engineer the correct balance so the head would bobble.

DavidWe: So, I've got a fair bit of science experience, but much less teaching experience, except what I've learned form teachers over the past decade or so

StaffanyR: What grade was this Catherine

JasonDe joined the room.

DavidWe: Hi, Jason.

CatherinBr: Well, this was more directed towards middle school.

JasonDe: hello

DavidWe: This is the K-20 science discussion, Jason. You are welcome to join us

CatherinBr: It took me hours to construct mine. I made a bumble bee bobble in the center of the flower.

DavidWe: So, how many of you know about the Eisenhower National Clearinghouse - www.enc.org

DavidWe thanks Catherine

DavidWe: Sounds cool, Catherine

JasonDe: Thank-you.....sounds interesting

DavidWe hopes it IS interesting, but we'll see

StewartK: I know a little bit about ENC, I think it's going to be closed soon though

DavidWe nods to Stewart

StaffanyR: How long did it take the Middle schoolers Catherine

DavidWe: Yes, ENC will lose its Dept. of Ed. funding in September, I believe. It is a great resource for K-12 math and science teachers

CatherinBr: My professor said, she let them take it home over the weekend.

BJB2: Stewart, ENC lost fed funding, but they are seeking alternative ways to keep the program going

DavidWe nods in agreement with BJ

StewartK: I liked the free material, but never used the "pay-per-view"

DavidWe: But, as it still exists, you should be able to access its resources for free

StewartK: Still, there is some good materials. I hope it gets alternative funding

DavidWe agrees

SusanR: This one is still free <http://www.yesican.yorku.ca/>

DavidWe: What are people looking for in coming to this discussion in Tapped In? Science teachers, what would you like to take home with you in the next 45 minutes?

DavidWe hopes for some feedback

StaffanyR: Susan is this site useful for math and science teachers only

StewartK: I really came with the intention of finding out more about this community, and to get an idea of people's interests.

DavidWe: Thanks, Stewart, I appreciate that

SusanR: science ..but can be integrated with math

DavidWe: Tapped In, is, above all, a community of educators

DavidWe: There is a lot of informal interactions that take place here as there are close to 22,000 educators (internationally) with accounts in Tapped In

StewartK: Having a community to come to is really important. I know education seems to be under attack with all that NCLB stuff

DavidWe: One of our regular discussion leaders is a Hummingbird expert and he conducts discussions on biology and environmental science

DavidWe agrees with Stewart

CatherinBr: Another project was call feeding frenzy. I cannot get into all the details but you have each student pick an object such as a strainer, spoon, or chop sticks. You then set down one by one selections of candy. They children try to pick it up as fast as they can. The strainer represent the whale. You make the students count the number of each candy you have selected to have them pick up. They must make a graph. The children now understand why whales can eat more food compared to other fish. There is more to the lesson. It is a blast.

SusanR listens to David and agrees with Stewart

DavidWe thanks Catherine again for description

DavidWe: How long have you been teaching, Stewart?

HelenK joined the room.

DavidWe: Hi, Helen. Welcome

DavidWe: Do any of you know about the Why Files?

HelenK: hello everyone, sorry I am late

StaffanyR: No

DavidWe: Very cool web site, based at the University of Wisconsin, it helps explain the science behind lots of things

DavidWe: Hi, Helen. Want to quickly tell us what you teach and where you are?

StewartK: I taught at the university level for 5 years, and did my student teaching (got the certifications) for secondary science education. However, the opportunity for the instructional design program opened up, and I left the middle school I was at to pursue that.

DavidWe . o O (www.whyfiles.org)

DavidWe: Sounds very cool, Stewart. You are in New York State?

StewartK: yes

HelenK: I teach adults who are upgrading their skills in Quesnel, BC Canda

DavidWe is across the Hudson river from NYC

DavidWe: Welcome, Helen.

DavidWe waves west towards British Columbia

StewartK: I'm out in Sound Beach...about 73 miles out from NYC

DavidWe: This is a bit of an informal session as I don't usually lead the K-20 science discussion. So please bear with me

DavidWe . o O (Long Island?)

DavidWe . o O (beach?)

CatherinBr: How many of you hand out work sheets? At UofH, we are taught to only teach students by hands on learning.

DavidWe: Sounds nice, Sound Beach

StaffanyR: well this is what Tapped In is about, getting to know other educators

SusanR: Just returned from a ski trip in Panorama, BC, Helen

StewartK: Yes, it's nice out here....big oak trees etc and the LI sound is 3/10s of a mile from my house

DavidWe: I think that's great that University of Houston encourages hands-on learning, Catherine. However....

DavidWe feels geographically disadvantaged but it was a sunny, Spring day today in New Jersey, even

DavidWe: Lots of teachers do use worksheets, I would guess

StewartK: No way Dave...plenty of good stuff in Jersey

DavidWe juggles balls in the air

DavidWe smiles

DavidWe: Yes, there is. It's actually a great state

StaffanyR: I attend the University of Houston too, and I believe that sometime worksheets are necessary

DavidWe: Plenty of chemistry here, in the air, in the ground, in the very good tomatoes

DavidWe: Want to say a bit more, Staffany?

DavidWe: Why?

StewartK: can't wait for those...those tennis ball inedibles have got to go

DavidWe nods

DavidWe . o O (Jersey tomatoes are hard to beat!)

StewartK: Yes, I know what you mean..polystyrene:(

StaffanyR: I totally agree with hands on activities, but some things require writing

DavidWe thinks that is hard to not be interested in science if one tries to grow things in a garden

DavidWe: Can students demonstrate knowledge in other ways, without writing, Staffany?

StaffanyR: of course

DavidWe: for example?

StaffanyR: some demonstrate knowledge best by writing

DavidWe nods

CatherinBr: We have a great Health and Science Museum here in Houston. I recently went to a professional development program at another close by Museum which was exhibiting Gold. If anyone comes to Houston, check out these places

SusanR: oral presentations

DavidWe nods

StaffanyR: so it shouldn't always be an option but it should be

DavidWe: I agree, Staffany

StewartK: learners like to do multimedia presentations too

DavidWe: Doing the very same thing ALL the time certainly can make the classroom rather dull

StewartK: many learners are big on powerpoint

StaffanyR: it shouldn't always be an option but it should be one sometimes

DavidWe: One aspect of the Internet that has been really remarkable is the ability for K-12 students to interact with experts

DavidWe: They can actually learn what it means to be a scientist, what do scientists do, how do they live, how they got to be scientists. This can be invaluable. The scientists can also mentor the students

StewartK: I think there is an international group of students and experts doing a weather project, sorry, it's been awhile so I don't have the url

StaffanyR: That is encouraging to hear

DavidWe: I've got an interesting family anecdote: My mother, my grandmother and my great-grandmother are/were doctors

StewartK: what kind?

DavidWe: Thanks Stewart, yes, there are some very cool collaborative projects, especially about the weather

DavidWe: Family practitioner (great-grandma), allergist (grandma), hematologist (ma)

StewartK: nice:)

StaffanyR: interesting

StaffanyR: I am sure at one point you wanted to become a doc

DavidWe: I've never met anyone who is related to 3 generations of women doctors, but I wonder if someone who grows up with a mother who is a doctor AND a grandmother who is one, must say, "How hard can it be?"

DavidWe: . o O (Dad's a doctor, also)

DavidWe: I did wear lab coats a lot as a child

StaffanyR: HAHA

StewartK: Was it difficult for them to enter the field. I mean we sometimes forget how limited opportunities for women can be, especially in the professions

DavidWe: If one has access to information about a particular career, it is much easier to see oneself taking on that same role, if it is appealing

DavidWe agrees with Stewart

DavidWe: Although we lived with my grandparents, my mother had two children under 2 years of age as she started her 2nd year of medical school. But, it generally worked out

CatherinBr: At the Health and Science Museum, you walk through enormous body parts. The children are required to play a scavenger hunt to answer questions, so they are actually learning something. We also have a Children's Museum which shows all sorts of

science related things, how machines work, bubbles that fit over your body, and hands on water activities. Teachers are very fortunate in Houston because we have so many great museums.

DavidWe: But exposure to different things (hospitals and laboratories for me) made it easier to know that I liked science and knew people who did it

DavidWe: That's cool, Catherine. The Franklin Institute in Philadelphia has a giant model of the Human Heart

StewartK: Dave, you mentioned you worked in a research lab.. was it molecular work?

DavidWe: Most science museums have EXCELLENT web sites - www.fi.edu - the Franklin Inst., for example

DavidWe: Yes, I cloned a gene - did molecular biology

DavidWe: It's really not that hard...machines are doing it now

StaffanyR: Really

DavidWe: Essentially you follow a recipe - somewhat complicated, but I think a high school students with some basic knowledge could do what I did

StaffanyR: sounds neat, how long did it take to do that

DavidWe: Really, Staffany...it's not that hard

StewartK: I started out as an applied biologist (aquaculture), but after an internship in Israel, I got into phycology..using microalgae to make specialty chemicals

DavidWe: Kind of cool, working with DNA, seeing how the stuff looks and feels

StewartK: slimy lol

DavidWe: That sounds pretty cool, also, Stewart. Where in Israel did you spend time?

DavidWe smiles

DavidWe: Slimey, indeed!

StewartK: Elat, on the Red Sea

DavidWe always like to point out that seaweed (carageenana) makes store-bought chocolate milk, creamy and smooth

DavidWe: Wow, I'm jealous again

StewartK: and ice cream

DavidWe nods

DavidWe: Better living through chemistry

DavidWe . o O (cooking is just applied chemistry)

DavidWe: Lots of good chemistry lessons in the kitchen

CatherinBr: Texas A&M, close to Houston, is where I believe they cloned the first lamb.

DavidWe: Does everyone understand why you put salt on the sidewalks in winter? Maybe the Houston folks are excused for that

StewartK: actually some seaweed agars are used to make electrophoresis gels

DavidWe remembers hearing about the cloned lamb

DavidWe has poured a lot of agarose gels

CatherinBr: Actually we just had a hands on project involving just that.

DavidWe: What did you do, Catherine?

StewartK: yes, I think you can make a simple apparatus using a power pack and store bought agar

DavidWe: we used slightly more sophisticated equipment, but yes.

DavidWe: Jello probably works at some level

DavidWe smiles

DavidWe: The National Science Teachers Association www.nsta.org - has some good resources for science teachers

StewartK: Oh, I was thinking of the kinds of hands on projects you do in middle school, where you run dye molecules of different sizes to get the idea of the actual runs

DavidWe nods

CatherinBr: We made homemade ice-cream using two baggies. One big baggie and a smaller one. The big bag contained rock salt. The little bag inside contained cream, sugar, vanilla.

DavidWe: So, why do you use the rock salt, Catherine?

StewartK: Jello works great for demonstrating diffusion

DavidWe nods

DavidWe . o O (cherry, for me)

SusanR: aha the science of cooking

<http://www.exploratorium.edu/cooking/candy/index.html>

DavidWe smiles

DavidWe: Thanks, Susan.

CatherinBr: To lower the temp. I believe.

DavidWe: The Exploratorium is a GREAT place, in San Francisco

DavidWe smiles

DavidWe: Yup, exactly, Catherine

DavidWe: Do you know why it lowers the temperature?

SusanR: had a chance to go to the actual Exploratorium when we were in San Fran..

SusanR: wow

DavidWe likes the Exploratorium a lot

StaffanyR: How was it Susan?

CatherinBr: It is still confusing how salt melts the snow. Can you explain that?

DavidWe: They have a lot of great resources on their web site

SusanR: a good hands on site too <http://www.exploratorium.edu/explore/handson.html>

DavidWe wonders if anyone wants to give the temperature-lowering properties of salt a go

StaffanyR: Not I

DavidWe knows that Stewart worked in salt water

DavidWe smiles at Staffany

DavidWe: What happens when water gets colder, Catherine?

DavidWe . o O (34, 33, 32 degrees F)

CatherinBr: By the way, I use to live in Virginia where it snowed quite a bit.

DavidWe nods

DavidWe is glad that Catherine has snow experience

DavidWe: So, pure H₂O freezes at 32F/0C, right?

CatherinBr: I guess it freezes

StewartK: hint..salt is a ionic compound that affects delta t

DavidWe: liquid becomes solid

DavidWe isn't sure we are ready for "delta t" just yet

CatherinBr: who wants ice on the road?

DavidWe: not me!

DavidWe: so, if there is salt in the water, why should it LOWER the freezing point?

DavidWe . o O (It consequentially RAISES the boiling point)

CatherinBr: It is harder to freeze water with salt, right?

DavidWe: Yes

DavidWe: Exactly

DavidWe: What does the salt do?

CatherinBr: Well, I'm a cook, so I can relate to that.

SusanR: melts ice

DavidWe: ice forms a solid, it crystallizes

CatherinBr: Helps boil the water.

DavidWe isn't sure it "helps" boil the water...

StewartK: agrees

DavidWe: If there is salt around, it makes it "harder" to form the ice crystals...so...

DavidWe: The temperature has to be lower for the salty water to freeze

DavidWe . o O (Ocean rarely freezes where most of us are)

DavidWe: The salt ions (sodium, chloride) literally "get in the way" of the ice crystals

DavidWe: Boiling water boils at a higher temperature than pure water

CatherinBr: Thanks for the information. I will take it to my professor. She was having a hard time putting into words.

DavidWe: The salt in the water raises the boiling point

DavidWe nods

DavidWe: couple of good experiments that it is easy to do with a thermometer

StewartK: agrees with David

DavidWe: Thanks, Stewart

DavidWe looks at the clock and wonders if anyone has other questions about science, teaching or Tapped In, etc.

SusanR:

http://www.chaossience.org.uk/dem/public_html/article.php?story=2003111313250698

CatherinBr: We enjoyed doing this project. I will take your information to help explain to my future students.

DavidWe: Again, I apologize for this somewhat haphazard session, but I appreciate you all bearing with us

DavidWe: Thanks, Susan, that's for...?

DavidWe: Glad to hear that, Catherine

DavidWe . o O (salt in water?)

StaffanyR: No questions, thanks for your time and all your help

StewartK: Thanks David, especially looking at all the typing and reading you had to do.

DavidWe nods

DavidWe: You're welcome. Glad to have you all here. I actually like to talk about science stuff.

SusanR: neat discussion

DavidWe: just wasn't exactly planning on it. I have to go and microwave my soup!

StewartK: now...should we mention endo & exothermic? Not:)

DavidWe smiles

DavidWe laughs

DavidWe: Exactly!

DavidWe: Entropy?

DavidWe: Anyone?

DavidWe: Entropy?

CatherinBr: Don't stand to close. Just kidding.

StewartK: I'm a victim of entropy lol

DavidWe knows that a lot of people feel pretty poorly towards chemistry because they were made to memorized the Periodic Table in high school

DavidWe grins at Stewart

StaffanyR: That will be me

DavidWe: I'm just watching the end of NOVA on PBS. Hard to beat that for information about science

DavidWe: I grew up reading Scientific American

DavidWe: The pbs web sites for the science shows have some great resources as well

DavidWe: o O (www.pbs.org)

CatherinBr: My professor also agrees. She only makes her students learn some of the most important ones.

StewartK: Well, let me go too. I enjoyed my first meeting. Thanks again David for facilitating, and thanks to you all for the discussions:) Take care till next time.

DavidWe: I think, again, that if you have a teacher you connect with, who makes the topic (chemistry in my case) exciting, it's a very different experience.

DavidWe waves bye to Stewart.

StaffanyR: Well goodbye everyone

DavidWe: Bye, Staffany. Thanks for hanging out

DavidWe: Good luck

StaffanyR: No problem thank you

CatherinBr: Maybe I'll check in at another time. Enjoyed my first session.

DavidWe smiles

DavidWe: Thanks, Catherine. I appreciated you sharing some of your own experiences.

DavidWe: Good luck with your program at Uof H

CatherinBr: Goodbye for now!

DavidWe: Bye

SusanR: Thanks for sharing, Catherine

StaffanyR left the room (signed off).

SusanR: You may want to join the K to 3 Resource Room, Catherine

DavidWe agrees with Susan

CatherinBr: I want to log off since I have been talking for two hours. I hope I don't mess up.

DavidWe: You'll do fine, Catherine.

DavidWe: See the "logout" in the top right corner of the web window?

SharonGst45 left the room.

CatherinBr left the room (signed off).