Tips and Guidelines to write good descriptions and annotation for a CLEAN teaching activity

Descriptions and annotations of teaching activities will be displayed on the public CLEAN sites to educators that search for teaching activities. Along with these two key parts there will be list of metadata displayed that informs about the activity/website. Examples for metadata that will be displayed separately are for example alignment with standards and benchmarks, grade level.

1) Tips to writing good description

The description is like an abstract for the activity. It should be 2—5 sentences, depending on how much depth there is in the activity. Put yourself in the shoes of a teacher searching for materials for the classroom. What do you really need to know?

There is no hard limit on the length, but keep in mind that most folks have a short attention span when surfing online. Users will be browsing quickly rather than doing in-depth reading.

General hints:

Do: Use text from the site itself; the site authors usually know their product best!

Don't: Treat the web page text as sacrosanct. You can change it to fit the needs of the description.

Do: Use non-judgmental descriptors, "This is an engaging activity on (topic)."

Don't: Use judgmental words (which often come from the site's own text) "This is the most complete activity on greenhouse gas emission."

Do: Describe what the web site is - case study, classroom activity, lab activity, homework assignment, group project, etc.

Don't: Summarize the contents of the activity. Just describe, for example, that the activity covers (topics xyz). Your description is a summary of what the activity contains, rather than a summary of all the material contained within the activity.

Do: Write the description for the target audience level, e.g. a middle school activity description should be geared towards teachers who do not necessarily have an extensive science background, a highschool activity description should use language that science teachers understand and college-level activities should be written at the level of a college faculty.

Don't: Use excessive jargon or write your description so that only professors in that field can understand it.

Do: Describe the most useful features of the activity. If you think it's cool, others most likely will too!

Don't: List the menu items contained in a site.

Don't: Don't include the title in the first sentence of the description, the title will be stated above the description.

A general format for descriptions:

- This is a (lab exercise, classroom activity, project.....) about (fill in the topic).
- Topics covered/discussed/explored/examined include ...
- The format of this activity is... (Another way to phrase this is: Students will.../ Students use data sets to piece together temperature records from several locations)

Some example descriptions for three different CLEAN teaching activities:

In this in-class activity students work in groups to plot carbon dioxide concentrations over time on overheads and estimate the rate of change over five years. Stacked together, the overheads for the whole class show an increase on carbon dioxide over five years and the annual variation driven by photosynthesis.

These are a series of activities that introduce students to polar oceanography and how events that occur in oceans thousands of kilometers away affect the mid-latitudes. Students explore how conditions are changing in the Polar Regions and the possible impacts upon life in the United States and other mid-latitude nations.

This teaching activity addresses the impact of climate variability on human health, using the example of the spread of the hantavirus in the south-western US. Students play a game to learn how climate variability can affect the food chain, learn to predict changes in animal population due to climate variability and interpret the relationship between climate variability and diseases using basic concepts of ecology and genetics.

2) Tips to writing a good annotation for a CLEAN teaching activity

Annotations for teaching activities are a synthesis of the comments from and assessments of all reviewers. They will be displayed on the public CLEAN sites to educators that look for teaching activities. They should be short and informative – something you would be excited to find if you were a teacher looking for activities for your classroom.

Annotations should be written in bullet lists – ideally no complete sentences where they are not necessary for clarification. This helps to avoid repetition of phrases that are unnecessary like "Students are…". Be consistent in your style of writing.

Annotation comments will be divided in **4 general categories** and 1 additional category. Under each of these categories the main positive aspects or shortcomings of an activity will be listed:

a) Science
b) Pedagogy
c) Technical Quality/Ease of Use
d) Notes to the Educator

There will be an additional category of "Diverse Learners/Underserved minorities". This category will only be added if an activity does an outstanding job at addressing this audience and will be blank for all other resources.

Here are some suggestions:

General comments:

Do: Include the most relevant comments for each review section and choose which aspects characterize the resource the best.

Do: Make sure to be very specific in each bullet - e.g. not generally say it is good but be specific what is good or don't say "The topic is covered well." but state the topic specifically and how it is covered (for example, with interactive graphics, or with a summary of important concepts).

Do: Only include compelling and important aspects – if there is nothing compelling about an aspect, don't mention it.

Don't: If there is nothing worth mentioning for one of the categories, don't enter anything.

Teaching tips

Do: Anything that is important for the teacher to know about the resource such as special materials needed, technology requirements, special software that exceeds the basics that can be expected in every school should be included in the annotation.

Do: Include information about how long the resources will take (e.g. How many class periods) in the teacher's tips. This will help the teacher to decide if this activity is what they were looking for.

Do: Include corrections, suggestions or tactics to improve on the activity. This is our one shot to add helpful information to improve the usefulness of the resource.

Here are examples of annotations:

1) <u>Power Source</u>

Science:

- This activity is only an introduction to electricity generation and does not contain or present new information
- The instructor needs to follow this with information about where energy comes from, both locally and on a larger scale.

Pedagogy:

- This is a simple, fun and powerful activity.
- The pedagogy of concept sketching is well-documented; students work in groups and can be creative with their sketches, but at the same time they are exploring relationships between different concepts.
- Allows for misconceptions to be aired and diagnosed by the instructor.

Teaching Tips:

- Takes less than one class period.
- Is an effective lead-in that can be used to introduce many different topics.
- Widely adaptable to many grade levels and settings.

2) <u>Carbon Dioxide Exercise</u>

Science:

- Can be used to introduce concepts such as seasonal fluctuations in atmospheric CO2, the carbon cycle, longer-term trends in atmospheric CO2, and data collection and analysis.
- Exposes students to real and current data, but in a scaffolded way that can be easily understood by non-science students.

Pedagogy:

- This interactive activity can be done during a lecture period rather than lecturing about these concepts.
- Students initially work in groups with a simple data-plotting task, and then they see how their data compares to other groups.
- This method makes the content easy to digest and engaging because students get to see how their own data set stacks up to form a bigger picture.

- Can be followed by more in-depth coverage of atmospheric carbon dioxide concentrations.

Teaching Tips:

- This activity takes one class period.
- Can be used in either lecture or lab, and with either a large class or a small one
- Instructors will want to use the most recent available CO2 data and a link to this data is provided on the activity.