Loop Antenna Lesson Plan Evaluation Form:
A Note to Instructors

The purpose of this evaluation form is to assess the effectiveness of this learning unit in helping students develop confidence in their scientific and technical abilities, gain an appreciation for how science and engineering works, and grow in their knowledge of science concepts. This evaluation should be administered before the students begin work on this unit, then again after they have completed the unit.

To administer this evaluation, first assign each student a four-digit code, and keep a list of the name and corresponding Student Code for each student participating in this unit. Pass out copies of pg. 2-5 of this document to each of your students, and make sure they write their Student Code where indicated in the evaluation – make sure they do not write their name anywhere on the assessment. (The purpose of the Student Code is to keep students' responses anonymous while still being able to compare how each student's responses change from before the unit begins to after it has been completed.) Once students have filled out their forms, save them and deliver them (either personally or digitally) to Dr. Mindy Backus or to Ellie White so that we can use them to see what works well and what needs to be improved about this learning unit. Remember to administer this test both before and after finishing the loop antenna lesson plans and to have students fill out the entirety of the form both times so that we can get a good "apples to apples" comparison of students' attitudes and knowledge before and after participating in the unit study.

We are also very interested to hear feedback from you on what you think worked well about the loop antenna lessons, and what could be improved. If, while working through this unit, you notice areas in the lesson plans where you feel that the concepts presented are too confusing or too in-depth / not deep enough, or if the activities are confusing and need to be explained further or modified, please make note of it and let us know. Alternatively, if you notice that certain parts of the lesson plan work really well, we'd love to hear about that, too! Feedback from you and your students will help us improve this unit for the next round of students and teachers who use it.

Student Code				

Loop Antenna Learning Unit Evaluation

This is not a test. The only "right" answer is whatever you believe. If you do not respond as you really believe, this information will not be valid. Your responses will remain anonymous. Please be sure that you give a response to every question or statement. Please respond only on the spaces provided. Please make a check under the option you feel is most accurate.

SA = Strongly Agree A = Agree D = Disagree SD = Strongly Disagree

		SA	A	D	SD
1.	Science is fun.	____	____	____	____
2.	Science is boring.	____	____	____	____
3.	Information learned in science is used in daily life.	____	____	____	____
4.	Being a scientist would be fun.	____	____	____	____
5.	Most scientists work alone.	____	____	____	____
6.	Scientists enjoy solving problems.	____	____	____	____
7.	In science it is important to plan experiments to test your own ideas.	____	____	____	____
8.	I listen to the ideas of others.	____	____	____	____
9.	I solve problems.	____	____	____	____
10.	I ask questions.	____	____	____	____
11.	I prefer to work alone.	____	____	____	____
12.	I prefer to work in groups.	____	____	____	____
13.	I like to use computers and technology.	____	____	____	____
14.	I record my observations.	____	____	____	____
15.	I worry when my results do not match those of my classmates.	____	____	____	____
16.	I make graphs or charts using my results.	____	____	____	____
17.	Science is a list of facts.	____	____	____	____
18.	Science is thinking through problems.	____	____	____	____
19.	Science is testing ideas.	____	____	____	____
20.	Science never changes.	____	____	____	____
21.	Scientists show curiosity	____	____	____	____
22.	Scientists have a questioning attitude	____	____	____	____
23.	Scientists show skepticism	____	____	____	____
24.	Science is an interactive group activity	____	____	____	____
25.	Science is a way to generate ideas	____	____	____	____
26.	Science is a way to test theories	____	____	____	____
27.	Trial and error is unscientific	____	____	____	____
28.	What is known in science should be questioned	____	____	____	____
29.	Science is a process of constant testing of theories	____	____	____	____

Student code				

Student Survey

Indicate to what extent you agree or disagree with the following statements. It is extremely important that you respond to each statement honestly – there are no right or wrong answers. Please note that your responses will never be connected to you personally. As before, please make a check under the option you feel is most accurate.

SA = Strongly Agree A = Agree D = Disagree SD = Strongly Disagree

		SA	A	D	SD
1.	I am excited.	____	____	____	____
2.	I will be able to apply things I learn in class to other areas of science.	____	____	____	____
3.	I really want to build a loop antenna and search for solar flares.	____	____	____	____
4.	I'm looking forward to working in a group with my classmates.	____	____	____	____
5.	Learning about science is hard, and it makes me nervous.	____	____	____	____
6.	I'm worried that I don't have the background I need for this.	____	____	____	____
7.	I really want to succeed.	____	____	____	____
8.	I am afraid to speak up in a group setting.	____	____	____	____
9.	I know how to plan and perform a scientific experiment.	____	____	____	____
10.	I don't know if my class and I can get this experiment to work.	____	____	____	____
11.	I prefer to do science projects on my own.	____	____	____	____
12.	My teachers and mentors will help me when I need it.	____	____	____	____

		SA	A	D	SD
13.	Science is too hard for me.	____	____	____	____
14.	I am afraid to ask science-related questions.	____	____	____	____
15.	I'm afraid we won't get good results.	____	____	____	____
16.	Using the scientific method is important.	____	____	____	____
17.	I feel confident about doing research.	____	____	____	____
18.	Getting the right answer is important.	____	____	____	____

19. 31. Please state any additional thoughts and concerns you have as you begin the loop antenna learning unit.

_____

_____

_____

_____

20. Gender: _____

21. Age:_____

22. Favorite subject:_____

23. Career Interests:_____

24. Last report card grade in science (please circle): A B C D F

25. Race/Ethnicity:

Caucasian _____ Hispanic _____

African American _____ Asian American _____

Other_____

Student Code				

Science Content Evaluation

In this part of the evaluation, you will be asked to answer a number of science questions to the best of your ability. This exercise will not be given a grade; your answers to these questions will just give us information about how effective the Loop Antenna lesson plans are at teaching science. Do your best to answer these questions based on what you know now.

1. **The Sun is made up of many layers. Name one or more of the Sun's layers.**

   _____

2. **What is another word for "electromagnetic radiation"?**

   _____

3. **Imagine you have a question about something, and you want to find the answer. What steps would you take to make sure you follow the scientific method to find an answer to your question? Answer in the spaces below.**

   a. _____

   b. _____

   c. _____

   d. _____

4. **We use invisible light in our everyday lives. Circle one: True or False**

5. **Like people and animals, stars have lifecycles. Circle one: True or False**

6. **Solar flares and solar winds don't affect Earth. Circle one: True or False**