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Alternative Viewpoints 45 min

Objective:

Alternative energy sources are emerging at rapid rates in an effort to cut down on pollution and stop global warming. There are opposing viewpoints, however, that are opposed to alternative energy. Students will research various viewpoints and background on the topic before formulating their own opinions.

Big Idea:

In this lesson, students will evaluate multiple viewpoints on alternative energy sources and formulate their own opinions based on their research.

1. Warm Up / Anticipatory 5 min

To begin, students will view the photograph, taken on a drive through Indiana. In response to viewing the photo, students will write everything they know about the photo without any prompting (two minutes). This will ensure that any prior knowledge is activated before beginning the lesson. Once time is up, students will share with an elbow partner and decide on one important piece of information to share, per pair. The teacher (or a student helper) will record all of the unique information on the board or chart paper for future reference.

Resources

- http://wg.wonderopolis.org/uploads/users/63/349/20170915_190602.jpg

2. Investigation and New Learning 30 min

Students will first be directed to the Wonderopolis website to examine [Wonder #732](#). With their elbow partners from the warm-up, students will read the information and check out the supporting sources, including websites, videos, and photos to confirm what they already knew about wind farms and note any newly learned information. Then, students will complete the following statement in their pairs:

Wind farms are/are not an effective source of alternative energy because _____.

Students will transfer this onto a sentence strip or sticky note and place this in a central location in the room, such as the board or a piece of chart paper.

Once this opinion statement is completed, students will search independently for one additional alternative energy source and read about it in the same manner. They will complete one more statement as they did before, such as:

_____ is/is not an effective source of alternative energy because
_____.

There are several other Wonders that address alternative energy sources that can be used as well if students are struggling to find new sources:

- [#1438](#) - Solar Energy
- [#1497](#) - Nuclear Energy
- [#1598](#) - Geothermal Energy

Be sure to remind students to properly document their sources.

* If technology is not available individually, small groups or whole group can take a look on available devices.

3. Review & Check for Understanding 30 min

In order to assess students' ability to formulate informed opinions on a topic, students will individually address the following prompt and submit for formative assessment:

Do you recommend using alternative energy sources? Why or why not? Support your opinion with relevant evidence from your research today.

Standards: LA 0.15.B. 110.11 (F) 110.11 (C) LA 0.15.C. LA 0.16.D. K.8.A) LA 0.16.E. 110.11 (B) K.16 (A) (III) K.RN.4.1. K.RV.1.1. K.RN.3.2. (K.9) (K.15) K.10 (A) K-PS3-1. K-ESS3-3. 3.1. K.RF.1.1. K.RN.2.1. 4.1. 5.1. 2.1. 1.1. K.RN.2.2. 2.4.3.A. LA 0.2.1.A. LA 0.16.M. LA 0.2.2.A. LA 0.4.1.A. 2.1.1.F. 2.1.1.D. K.RV.3.2. K.W.3.2. K.RI.LCS.9.1. K.RI.LCS.8.1. K.RI.MC.6.1. K.RI.LCS.9.2. K.RI.LCS.11.2. K.C.MC.2.1. K.W.MCC.2.1. K.RI.P.4.1. K.RL.LCS.10.2. K.12.B) K.12.A) K.1.K) K.I.3.1. K.RL.LCS.10.1. K.RL.P.4.1. K.S.1A.6. K.S.1A.8. RF.K.4. W.K.2. L.K.5.C. RI.K.8. RI.K.4. RI.K.1. RI.K.2. L.K.6. [3] SA1.1. SE3. SF1. [3] SE3.1. [3] SE2.1. [3] SA1.2. [3] SA2.1. 3.1. LA 0.16.I. W.K.2 L.K.5C RI.K.8 RI.K.4 RI.K.2 L.K.6 0.6.2.2. 0.2.2.2. 0.2.1.1. 0.2.4.4. 0.2.8.8. 0.3.0.4. RI.K.1 RF.K.4 0.3.2.2.2. 3.2. 3.4. 0.10.5.5.C. 0.10.6.6. K.ESS.1. 5.1. RI.1.2. RI.1.4. 1.2.6.6. RI.1.6. RF.1.4.A. W.1.2. SL.1.5. RF.1.4.C. 1.2.7.7. RI.1.10. RI.1.7. RI.1.10 L.1.4.A. 1.6.2.2. SL.1.5 L.1.4A L.1.5C 1.3.0.4.A. 1.2.10.10. 1.8.5.5. RI.1.1. RF.1.4A RF.1.4C W.1.2 1.2.8.8. SE3. 1.13.C) 1.13.A) 1.10.10) 1.6.A) 1.8.A) RI.1.2 RI.1.1 1.10.F) 1.8.E) 1.10.4.4.A. 1.10.5.5.C. 1.1.1.1.2. 1.8.A) 1.8.B) 1.8.D) 1.8.C) RI.1.4 RI.1.6 [3] SE3.1. 1.2.4.4. SF1. [3] SE2.1. [3] SA2.1. [3] SA1.1. [3] SA1.2. 1.RI.LCS.9.2. 1.RI.LCS.9.1. 1.I.2.1. RI.1.8 RI.1.7 1.I.3.1. 1.RL.LCS.10.2. 1.RI.LCS.8.1. 1.RI.MC.6.1. L.1.5.C. 1.2.1.1. 1.8 (D) 1.RN.2.1. 1.RN.1.1. LA 1.1.5.B. LA 1.1.6.E. LA 1.1.5.C. 1.RN.2.2. 1.RN.4.1. 2.1. 3.3. 1.RI.LCS.11.2. 1.RV.2.1. 1.RV.1.1. LA 1.1.6.I. LA 1.1.6.M. 1.RF.1.1. 2.4.3.A. 5.1. 4.1. 2.1. 2.1.1.F. 2.1.1.D. LA 1.2.1.A. LA 1.1.6.O. LA 1.2.1.C. LA 1.2.2.A. LA 1.4.1.A. 4.2. 1.RV.3.2. 1.14 (B) 1.17 (A) 1.14 (A) 1.6 (C) 1.2.2.2. 1.4 (B) 1.18 (A) 1.E.3A.4. 1.S.1A.8. 1.19 (A) 1.W.MCC.2.1. 110.12 (F) 1.S.1A.6. 110.12 (C) 110.12 (D) W.9-10.8. W.9-10.10. L.9-10.4.A. W.9-10.5. W.9-10.4. WHST.9-10.4. RI.9-10.2. RI.9-10.4. RI.9-10.1. [10] SE3.1. L.9-10.4.D. 9.3.2.1.1. L.9-10.6. 9.13.4.4. 9.14.2.2.D. 9.13.5.5. [10] SA1.1. [10] SE1.1. RST.9-10.4. RST.9-10.5. SF1. SE3. 9.14.4.4. WHST.9-10.2.D. 110.48.6 (C) EIII.9 (B) 110.33 (A) 110.33 (B) EIII.1 (C) EIII.1 (B) 110.32 (A) 110.32 (B) EIII.1 (A) EIV.1 (A) EIV.1 (B) 110.34 (B) 110.46.1 (A) 110.47.1 (A) 110.34 (A) EIV.13 (B) (EIV.8) EIV.9 (D) EII.13 (B) EII.9 (B) 9-10.RV.1.1. 9-10.RN.2.2. 9-10.RN.2.1. 9-10.RV.2.1. 9-10.RV.2.2. ES.3.4. 9-10.W.4.1A. 9-10.RN.1.1. EI.1 (A) EII.1 (A) EII.1 (C) (EII.8) 110.31 (B) 110.31 (A) (EI.8) EI.13 (B) 110.47.2 (A) 110.47.3 (D) ENV.2.7. ENV.2.8. 110.52.1 (A) ENV.2.4. ES.4.5. 10.5.H) 10.5.F) 10.3.F) 110.52.2 (A) 110.53.1 (A) 110.54.3 (B) 110.54.5 (A) 110.54.5 (B) 110.54.2 (A) 110.53.3 (B) 110.53.1 (B) 110.53.2 (A) 10.6.A) 10.6.C) 110.47.8 (D) 110.48.2 (A) 110.48.2 (F) 110.47.6 (C) 110.47.6 (A) 110.47.4 (C) 110.47.5 (B) 110.48.3 (A) 110.48.4 (E) ES.11.C) ES.6.D) ES.6.B) 110.51.5 (A) 9.1.3.4.1. 110.48.4 (F) 110.48.5 (A) 110.55.2 (C) 9.5.1.1. H.E.3B.2. H.E.5A.4. H.E.1A.6. E4.RI.LCS.11.2. E4.RI.LCS.9.4. E4.RI.LCS.9.5. RST.9-10.4. RST.9-10.5. WHST.9-10.4. 12.1.3.10) 12.4.3.A. 12.4.3.B. WHST.9-10.2(D) 12.4.3.C. E4.RI.LCS.9.3. E4.RI.LCS.9.2. E3.RI.LCS.11.2. E3.C.MC.1.1. E3.RI.LCS.9.5. E3.RI.LCS.9.4. E3.RI.LCS.9.2. E3.RI.LCS.9.3. E4.I.2.1. E4.RI.P.4.1. E4.RI.LCS.8.1. E4.RI.LCS.9.1. E4.RI.MC.6.1. E4.RI.MC.5.2. E4.RI.P.4.3. E4.RI.MC.5.1. 12.1.3.F. 12.1.2.B. RI.9-10.2 RI.9-10.4 RI.9-10.1 ES.7.1. HS-ESS1-1. ES.8.1. W.9-10.4 W.9-10.5 9.1.2.1.3. L.9-10.6 L.9-10.4D L.9-10.4A W.9-10.8 W.9-10.10 HS-ESS3-2. HS-ESS3-4. LA 10.2.1.C. LA 10.1.6.O. LA 10.2.1.10) LA 10.2.2.A. 12.1.2.A. LA 10.4.1.A. LA 10.1.6.M. LA 10.1.6.I. LA 10.1.5.C. LA 10.1.4.A. LA 10.1.5.D. LA 10.1.6.E. LA 10.1.6.H. LA 10.1.6.F. E3.RI.LCS.9.1. E4.C.MC.1.1. E1.RI.P.4.3. E1.RI.P.4.1. ES.4.2. 9.5.2.2. E1.RI.MC.5.1. E1.RI.MC.5.2. E1.RI.LCS.9.3. E1.RI.LCS.9.2. E1.RI.LCS.9.1. E1.RI.MC.6.1. ES.6.1. 5.1. 9.11.4.4.D. 9.11.6.6. 9.1.2.1.1. 9.1.2.1.2. E3.RI.LCS.8.1. 9.11.4.4.A. 9.5.4.4. 9.7.4.4. 9.7.5.5. 9.7.8.8. E1.RI.LCS.9.4. E1.I.2.1. E2.RI.LCS.9.3. E2.RI.LCS.9.4. E2.RI.LCS.9.2. E2.RI.LCS.8.1. E2.RI.MC.6.1. E2.RI.LCS.9.5. E2.C.MC.1.1. E1.RI.LCS.9.5. E3.RI.P.4.1. E3.RI.P.4.3. E3.RI.MC.5.1. E3.I.2.1. E3.RI.MC.5.2. E2.RI.LCS.9.1.