

Grade 9 Social Sciences Worksheet

Green Revolution and GMOs

An issue of international concern is the world's ability to feed itself. Some people believe that there is enough food in the world to go around. Others believe that unless scientists intervene, many more people will go hungry in the future.

- 1.1 Explain what the Green Revolution was. [4]
- 1.2 Why was it considered to be successful? [2]
- 1.3 Describe any two problems (negative effects) associated with the Green Revolution. [4]
2. Are the following statements TRUE or FALSE? (Simply write T or F next to each statement.) [2]
 - 2.1 There are fewer famines in many developing countries because of genetically modified food.
 - 2.2 Crop production went down in some areas, because farmers produced mainly only one type of crop which could have been lost because of disease or pests.

3. Study the cartoon highlighting the GMO debate.
 - 3.1 What does the cartoon suggest about GMOs? [2]
 - 3.2 Do **you** agree/ disagree with the use of GMOs? Give reasons for your answer. [8]



Grade 9 Social Sciences Worksheet

Study the following picture, read the text and answer the questions that follow.

"I have seen young children walking for hours to fill huge jerry cans so that their families can have basic drinking water. Often, the water they collect is far from clean and, with little food available, they are using up precious energy to get what we receive when we simply turn on a tap. Millions of kids are forgoing an education and a chance for a better life because they are spending five hours a day fetching and carrying water.

The real genius is that, instead of putting a hand pump on the borehole which is hard work to use, they put a roundabout on top. Children travel kilometres to play on the roundabout and, as they whiz round laughing and squealing with delight, they generate the energy to pump as much as 1 400 litres of water per hour. Not only does this give fresh, safe drinking water for their entire community, but there is even enough left over to irrigate crops. The added benefit is that the kids now have the time to go to school and to have a better life. The scheme, which is backed by the World Bank and the South African government, has installed more than 650 pumps."



4. The purpose of the roundabout play pump is to provide water for a rural community. Explain how this will enable the community to have a better standard of living. [4]
5. Do you think that the technology is appropriate to the people using the play pump? Explain your answer. [6]
6. Explain why the children will get a "better life". [4]
7. Describe any possible problems that the play pump might present in the future. [4]
8. **Sustainable development** [20]

"There is no such thing as sustainable development, if by development we mean raising the technological standard of living of the human population."

Is it possible to raise the whole human population to an acceptable standard of living in a way that leaves the Earth's resources healthy and reusable?

Grade 9 Social Sciences Worksheet

Write an essay to illustrate that you understand the concept of sustainable development, giving real-world examples to support your argument.

Grade 9 Social Sciences Worksheet

Suggested Solutions

- 1.1 The Green Revolution was the change in agriculture that involved extensive mechanised farming using hybrid crops and animals to optimise production. The Green Revolution started in the 1920s.
- 1.2 The Green Revolution was successful in that world food production has grown faster than the human population.
- 1.3 Rural depopulation, loss of genetic diversity of food-producing crops.
- 2.1 T
- 2.2 T
- 3.1 That they are alien and dangerous.
- 3.2 This answer should refer to both the good and the bad aspects of GMOs.
- We do not know how safe they are.
 - There is the danger that there will be a loss of biodiversity.
 - Eco-systems that depend on certain species may die.
 - They do promise an increase in food production.
 - They will make farming more profitable.
 - Many people believe that they are not as healthy as organic crops.
4. Clean, safe water is essential to a better standard of living. Less disease, less time fetching water, time better spent on other activities.
5. Yes, this is an example of appropriate technology. It is simple, durable and effective. There are almost no running costs for poor communities.
6. More time spent at school, less absenteeism due to illness, cleaner healthier environment.
7. If it breaks, will someone be able to fix it? Will the children get bored with it?
8. Assess essay according to rubric in Appendix of Assessment Tools.

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Level	Content [8]	Structure [4]	Originality [8]
4	A variety of relevant examples are quoted. Understands the issues.	There is a clear structure, introduction, discussion and conclusion, using paragraphs and headings and subheadings. Flows easily.	Has good original ideas showing maturity of thought and depth of knowledge and understanding.
3	Some relevant examples, understands the issues.	There is a structure, introduction, discussion and conclusion, but lacking headings and subheadings.	Has some original ideas showing some depth of knowledge and understanding.
2	Only one or two examples, does not fully understand.	No clear structure, jumps from one idea to the next with no flow.	No obvious originality, arguments are shallow and clichéd.
1	Has little knowledge of the issues and is unable to quote examples.	No structure, disjointed.	Book learning or parroted clichés. Does not understand the issue.