**Environmental Science**

National Geographic Symbiosis Issue GRASPS

**G**oal -- For the student to demonstrate that they are able to identify the common forms of symbiosis – competition, mutualism, commensalism, predation, parasitism – and accurately describe each form (the roles of each organism plays, whether the organism is harmed or not, and describe the interaction).

**R**ole – The author of a special edition of National Geographic focusing on symbiosis

**A**udience – National Geographic readers and subscribers

**S**ituation – You have been commissioned by National Geographic to write a special edition of their magazine about symbiosis

**P**roduct – A special edition of National Geographic about symbiosis which must contain the following:

 1. Title page

 2. Table of Contents

 3. A section about symbiosis in general (i.e. definition, explanation, facts, list

 of types, etc.), that also describes how symbiotic relationships contribute

 to the stability of an ecosystem.

 4. A chapter for EACH of the five forms of symbiosis we have studied

 (mutualism, commensalism, parasitism, predation, and competition)

 which includes the following:

 A. A description of the form of symbiosis

 B. AT LEAST two pictures of the form of symbiosis obtained from old

 magazines, brochures, pamphlets, etc. You MAY NOT get your

 pictures from the internet.

 C. Identification of each organism in the interaction

 D. A description of each organism’s role in the interaction (how it

 interacts w/ the other organism, how it is affected by the

 interaction -- benefits, harmed, no effect, etc.)

 5. A chapter which contains descriptions of AT LEAST three of the five forms

 of symbiosis for the following organisms – humans, *E.Coli* bacteria, honey

 bees and two other organisms of choice. Each form of symbiosis MUST be

 described for at least 3 organisms.

 6. A chapter which details what would happen in each form of symbiosis if

 one or the other organism were to be absent.

 7. Reference page

**S**tandards -- **SEV3. Students will describe stability and change in ecosystems.**

 e. Describe interactions between individuals (*i.e.* mutualism, commensalisms,

 parasitism, predation, and competition).

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National Geographic Symbiosis Issue Rubric

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|  | **0 -- Not Addressed** | **2.5 – Does Not Meet** | **4 – Meets Standards** | **5 – Exceeds Standards** | **Self Evaluation** | **Teacher Evaluation** |
| **Student is able to accurately identify forms of symbiosis** | The student’s project does not address the identification of symbiotic relationships | The student accurately identifies 1-8 of the required number of symbiotic relationships (13) | The student accurately identifies 9-11 of the required number of symbiotic relationships (13) | The student accurately identifies 12-13 of the required number of symbiotic relationships (13) |  |  |
| **Student is able to accurately and thoroughly describe interactions between individuals** | The student does not address the description of any forms of symbiosis  | The student accurately and thoroughly describes 1-3 forms of symbiosis | The student accurately and thoroughly describes at least 4 forms of symbiosis | The student accurately and thoroughly describes all forms of symbiosis And includes additional, pertinent information |  |  |
| **Student is able to apply their knowledge of symbiosis in order to describe different symbiotic relationships for specific organisms** | The students does not describe symbiotic relationships for specific organisms | The students accurately identifies and describes 1-8 symbiotic relationships for specific organisms | The students accurately identifies and describes 9-12 symbiotic relationships for specific organisms | The students accurately identifies and describes 13-15 symbiotic relationships for specific organisms |  |  |
| **Student is able to describe how change in an ecosystem will affect the balance of a symbiotic relationship** | The student does not address how change (loss of one organism) affects the balance of a symbiotic relationship | The student’s explanation of how change (loss of one organism) affects the balance of a symbiotic relationship is inaccurate or unclear | The student’s explanation of how change (loss of one organism) affects the balance of a symbiotic relationship is clear and correct | The student’s explanation of how change (loss of one organism) affects the balance of a symbiotic relationship is clear and correct and contains additional information which makes the concept easy to understand |  |  |
| **The student’s product is neat, well organized, eye-catching and includes all of the required elements. It also utilizes correct grammar and spelling throughout.** | The student’s work is sloppy, shows very little effort, lacks many of the requirements and/or has many grammatical or spelling errors | The student’s work shows only minimal effort, is not neat or well organized, is missing several requirements and/or has several grammatical or spelling errors | The student’s work shows good effort, is neat and well organized, is only missing 1 or 2 requirements and/or has minimal grammatical or spelling errors | The student’s work shows excellent effort, is extremely neat and well organized, has all requirements and/or has no grammatical or spelling errors |  |  |

**Student Commentary**

**Teacher Commentary**