

## **Appendix A**

### **Basic Genetic Concepts Survey**

## Basic Genetic Concepts Survey

### Part I: Background of Student

1. Gender \_\_\_\_\_
2. Age \_\_\_\_\_
3. What is your Grade level?

☐ Grade 10

☐ Grade 11

☐ Grade 12

😊 \_\_\_\_\_ 😊

## Part II: Basic Genetic Concepts

Question 1: Which traits can be transferred by inheritance? You can choose by (✓) in front of choice(s). You can choose more than one choice.

- ☐ eyelids
- ☐ reading ability
- ☐ eyes color
- ☐ dimples
- ☐ flattened or prominent nose
- ☐ running ability
- ☐ hair color

Explain your choice(s)

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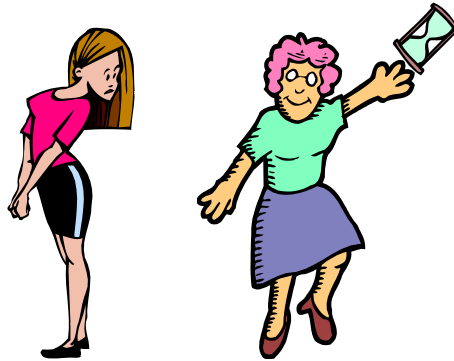
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Question 2: What controls curled or straight hair of humans? Why do you think like that?




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Question 3: From 'Question 2', where is/are the place of the thing(s) which control that trait? Please explain the reasons of your choice(s). The choices were chromosome, nucleus, every cell around sculpt, and every cell which has nucleus in the body.

- ☐ chromosome
- ☐ nucleus
- ☐ every cell on sculpt
- ☐ every cell which has nucleus in body

Explain your reason

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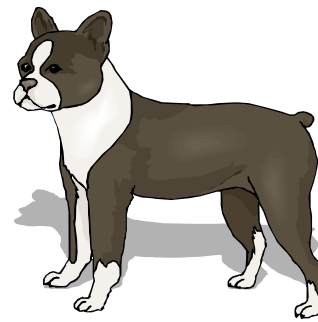


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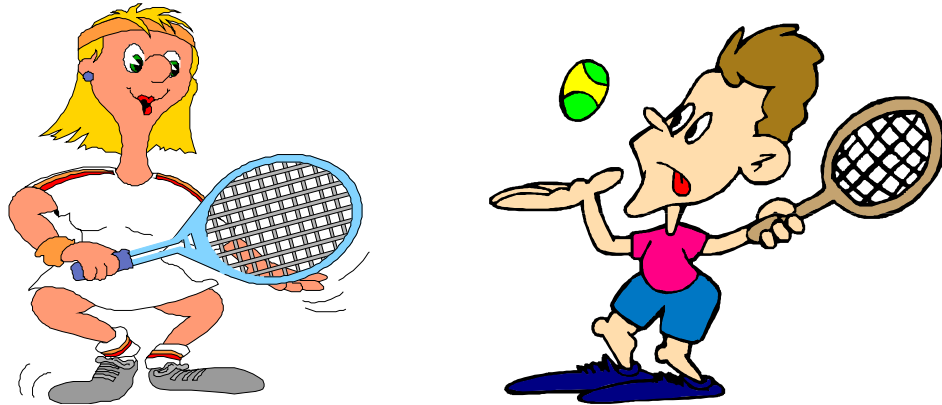


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Question 4: Suwanan have a couple of dogs. The male dog has curled hair and falling ears. The female dog has smooth hair and standing ears. If their puppy or puppies have curled hair and standing ears, what is the thing that control the traits? And how can the traits be transferred from the parent dogs to the puppies or to the puppies future litters?

[illegible]

Question 5: Suppose that Paradorn and Tammy are famous tennis players who had trained before playing a game. If they get married to each other, will their children have ability in tennis when they are born? Why do you think like that?

[illegible]

Question 6: Where is/are the position of chromosomes in the body? Why do you think like that?

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Question 7: Do the living organisms which have the same chromosome number necessary have to be the same living organisms? Why?

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Question 8: Are there the same number of chromosomes in sex cells that there are in somatic cells? If not, what is the ratio of chromosome numbers in sex cells and in somatic cells? Why do you think like that?

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Question 9: What are the component(s) of chromosomes? Why are they important?

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Question 10: Somsri has a black male cat and a white female cat. When they have kittens, all of them are black. How can you explain this situation? Why do you think like that? (You can show your ideas by drawing, making charts or explaining)



Question 11: Chatchai and Sinjai are a couple who have the thalassemia gene. Thalassemia is a genetic disease. Both of them are normal people without any symptom of thalassemia disease. Do their children have a chance of developing thalassemia disease? Why do you think like that?

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Question 12: If Chatchai gets married with one of his relatives, what is the chance of their children having thalassemia disease?

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Question 13: Apaporn has an ox and a cow. What is the gender of their offspring?  
And why do you think like that?

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Question 14: What are the relationship of structure or function among DNA, gene,  
and chromosome?

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Question 15: Have you ever heard about 'genetic engineering'?

☐ I heard

☐ I'd never heard

If you heard about it, please answer these questions.

A. where did you hear from?

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B. What do you know about 'genetic engineering'?

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😊 Thank You 😊