**Enzymes Break it Down: Exit Slip**

1. What color was the uneaten cracker when treated with iodine? Blue/black
2. **Taste test**: record the taste of your cracker every 2.5 minutes

|  |  |  |  |
| --- | --- | --- | --- |
| First taste | 2.5 min. | 5 min. | 7.5 min. |
| Bland | Sweeter | Sweet | Sweet |

1. What color was the eaten cracker when treated with iodine? Why do you think this happened? Blue/black because
2. **Demonstration**: Record results

|  |  |  |  |
| --- | --- | --- | --- |
| Student 1  Water | Student 1  Saliva | Student 2  Water | Student 2  Saliva |
| Blue/black | Brownish | Blue/black | Brownish |

1. Why do you think there were different results in the second saliva demonstration? Smaller amount of cracker
2. Enzymes are proteins that speed up or slow down a chemical reaction and are not consumed by the reaction. The most easily understood use of enzymes is in the digestion process.
3. Amylose, one of three forms of starch is a long polymer of glucose subunits bonded together, and is found in crackers. Iodine molecules cause the starch to turn blue/black in color.
4. Amylase is an enzyme found in saliva that breaks down amylose into its individual glucose subunits. As the cracker is chewed, salivary amylase starts breaking down the amylase into shorter glucose polymers. Some will be converted and taste a little sweet.
5. Because of the large amount of starch in the cracker in the first trial there wasn’t enough amylase in the saliva to break down all of the glucose, resulting in a blue/black color.
6. In the second trial, with a smaller piece of ground up cracker in a large volume of saliva, there was enough amylase to digest all of the starch in a few minutes, resulting in a brownish color.

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2. **Taste test**: record the taste of your cracker every 2.5 minutes

|  |  |  |  |
| --- | --- | --- | --- |
| First taste | 2.5 min. | 5 min. | 7.5 min. |
|  |  |  |  |

1. What color was the eaten cracker when treated with iodine? Why do you think this happened?
2. **Demonstration**: Record results

|  |  |  |  |
| --- | --- | --- | --- |
| Student 1  Water | Student 1  Saliva | Student 2  Water | Student 2  Saliva |
|  |  |  |  |

1. Why do you think there were different results in the second saliva demonstration?
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are proteins that speed up or slow down a chemical reaction and are not consumed by the reaction. The most easily understood use of enzymes is in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ process.
3. Amylose, one of three forms of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, is a long polymer of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ subunits bonded together, and is found in crackers. Iodine molecules cause the starch to turn \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in color.
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is an enzyme found in saliva that breaks down amylose into its individual glucose subunits. As the cracker is chewed, salivary amylase starts \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ down the amylase into shorter glucose polymers. Some will be converted and taste a little \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
5. Because of the large amount of starch in the cracker in the first trial there wasn’t enough amylase in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to break down all of the glucose, resulting in a blue/black color.
6. In the second trial, with a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ piece of ground up cracker in a large \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of saliva, there was enough amylase to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ all of the starch in a few minutes, resulting in a brownish color.