Paper Enzyme Activity

Background: Enzymes are proteins that help chemical reactions occur faster by lowering the energy that is needed for the reaction to occur. The enzymes react with a substrate to form an enzyme-substrate complex. Once this complex is formed the enzyme will break the bonds in the substrate and a product will be formed. The enzyme is then able to react with more of the substrates. The enzyme is shaped so that it will only react with a specific substrate. The substrate must fit into the enzyme for the reaction to occur.

Purpose: Your job will be to cut out, manipulate, glue and explain the reactions that are occurring with the pieces provided.

Procedure:

1. Cut out all enzymes, products, and substrates.
2. Organize the cutouts so that all the pieces demonstrate the equation below.

**Enzyme + substrate 🡪 enzyme-substrate complex 🡪 enzyme + product 1 + product 2**

1. Glue the cutouts in the appropriate places.
2. Label the cutouts.
   1. Enzyme= Lactase
   2. Substrate= Lactose
   3. Products= glucose and galactose
3. With the above terms explain the reaction and what happened.

A yellow cartoon character with text

Description automatically generated with medium confidenceA diagram of different types of glucose

Description automatically generated

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Enzyme | + | Substrate | 🡪 | Enzyme-Substrate Complex | 🡪 | Enzyme | + | Product 1 | + | Product 2 |