



## OPERON REVIEW

NAME \_\_\_\_\_

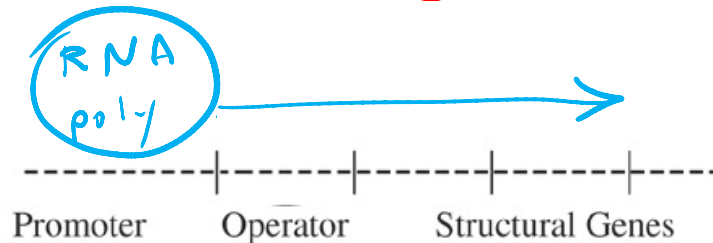
 =  = lactose  
repressor

Use your pool noodle operon to demonstrate the following then draw a picture below.

What happens to transcription at the lac operon when glucose levels are low and lactose levels is present and why? Be sure to include: RNA polymerase, repressors, and any other molecules needed to show the following:|

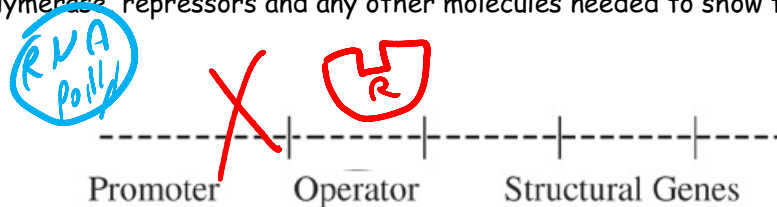
### lac OPERON

#### GENE TURNED ON



What happens to transcription at the lac operon when glucose levels are high and lactose is absent and why? Be sure to include: RNA polymerase, repressors and any other molecules needed to show the following:

#### GENE TURNED OFF



Most of the time this operon is turned ON OFF (Circle one)

The *lac* operon is a REPRESSIBLE INDUCIBLE OPERON (Circle one)

When this operon is "turned on" the repressor is ACTIVE INACTIVE (Circle one)

When this operon is "turned off" the repressor is ACTIVE INACTIVE (Circle one)

Draw a picture of the repressor when it is **ACTIVE**:



The regulation of this operon is an example of \_\_\_\_\_ control.  
positive negative

Inducible operons are most commonly associated with enzymes that function in \_\_\_\_\_ pathways.  
catabolic anabolic

Show and tell me what happens to transcription at the *lac* operon when lactose is absent and why.

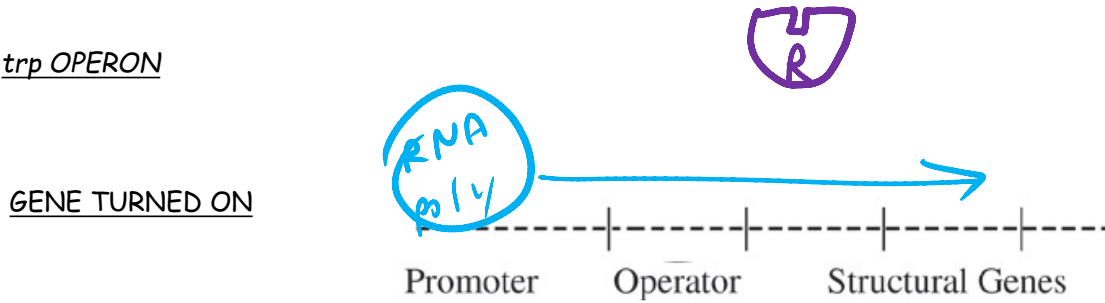
no lactose gene off don't need enzymes

Use your pool noodle operon to demonstrate the following then draw a picture below.

Show & Tell to explain what happens to transcription at the *trp* operon when tryptophan levels are low.

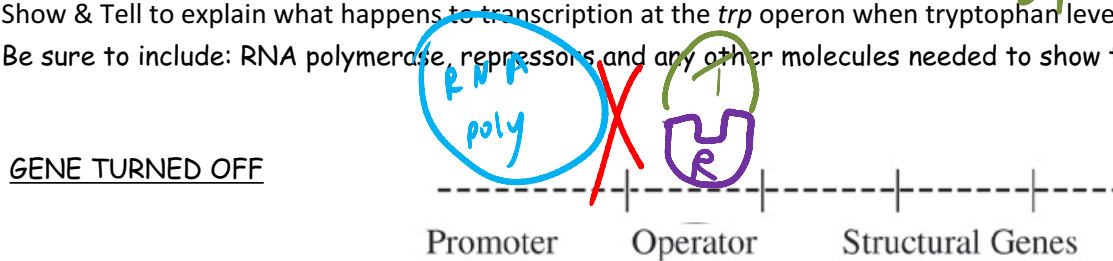
Be sure to include: RNA polymerase, repressors, and any other molecules needed to show the following:

*trp* OPERON



Show & Tell to explain what happens to transcription at the *trp* operon when tryptophan levels are high.

Be sure to include: RNA polymerase, repressors, and any other molecules needed to show the following:



Most of the time this operon is turned ON OFF (Circle one)

The *trp* operon is a REPRESSIBLE INDUCIBLE OPERON (Circle one)

When this operon is "turned on" the repressor is ACTIVE INACTIVE (Circle one)

When this operon is "turned off" the repressor is ACTIVE INACTIVE (Circle one)

Draw a picture of the repressor when it is ACTIVE:



The regulation of this operon is an example of \_\_\_\_\_ control.  
positive negative

Repressible operons are most commonly associated with enzymes that function in \_\_\_\_\_ pathways.  
catabolic anabolic

Show and tell me what happens to transcription at the *trp* operon when tryptophan is absent and why.

Gene on to make tryptophan unless it is available then don't need to make it

PICK AN OPERON:

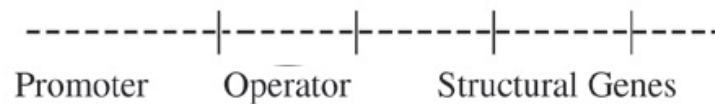
Your assigned operon is similar to which of the above operons? *lac* *trp* (Circle one)

Your assigned operon is **inducible** **repressible** (Circle one)

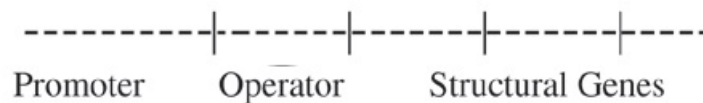
In a cell the repressor for your assigned operon is usually in the **active** **inactive** form. (Circle one)  
and the gene is turned **OFF** **ON** (Circle one)

DRAW PICTURES TO SHOW HOW YOUR ASSIGNED OPERON WORKS:

TURNED ON



TURNED OFF



FIND SOMEONE WITH A DIFFERENT ASSIGNED OPERON. Share your pictures and explain how your assigned operon works.