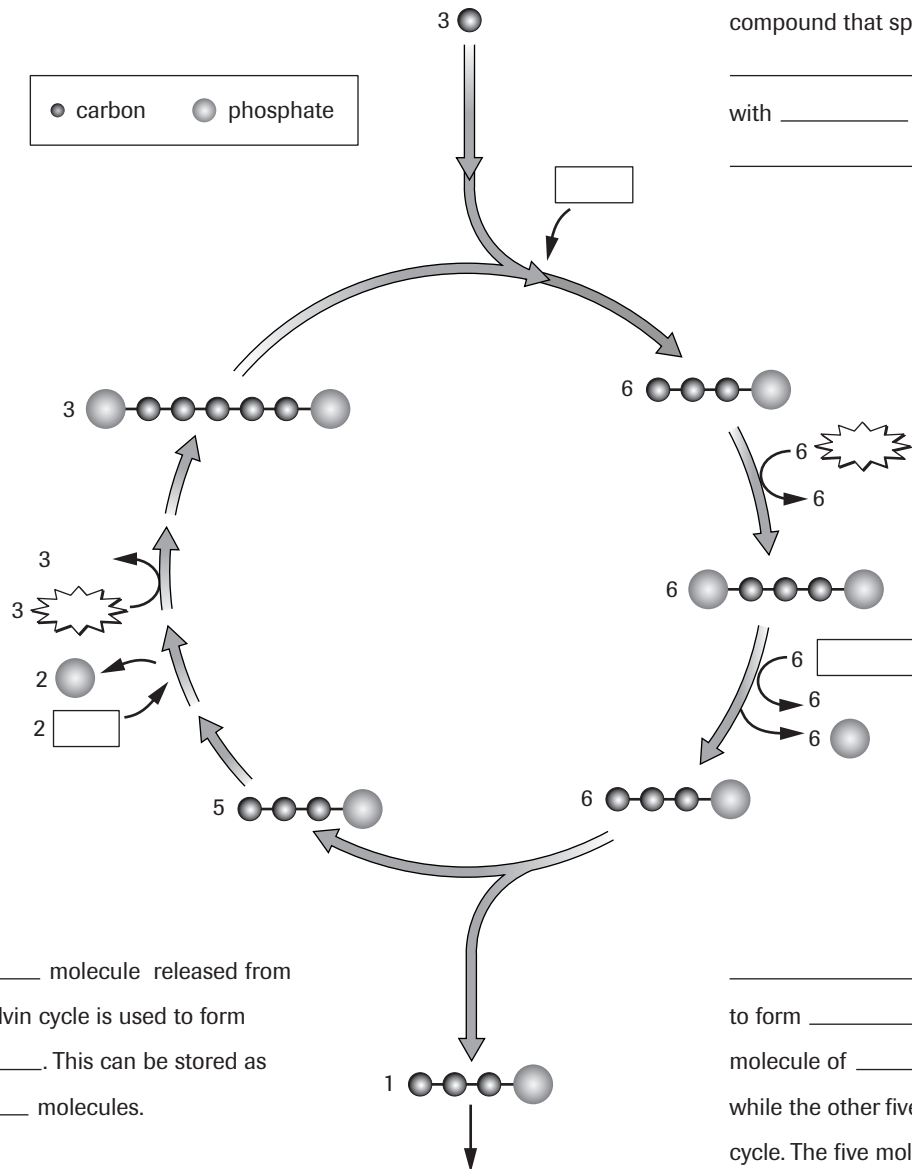


# The Calvin Cycle

Label the diagram of the Calvin cycle and fill in the blanks of the summary.



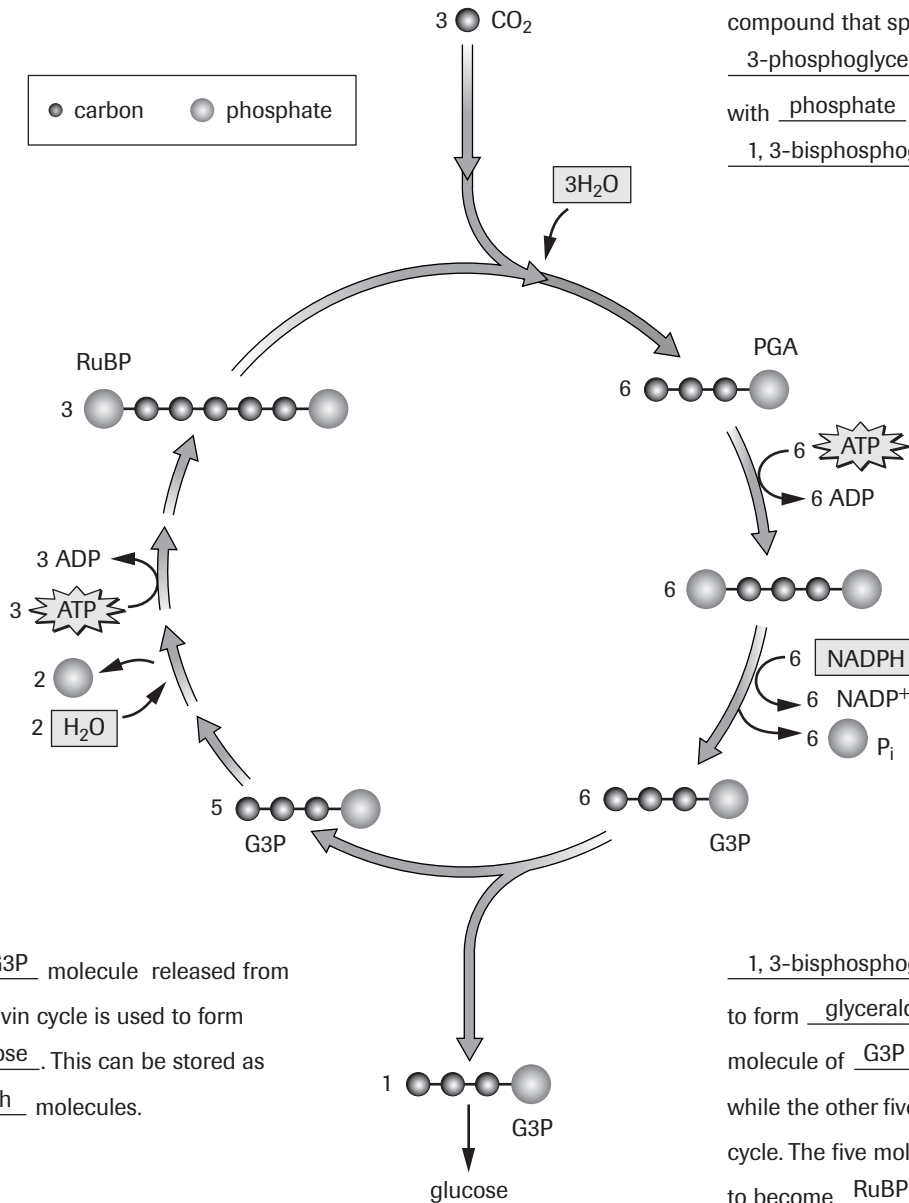
Three molecules of \_\_\_\_\_ combine with \_\_\_\_\_ with the help of the enzyme \_\_\_\_\_. This forms an unstable intermediary compound that splits to form six molecules of \_\_\_\_\_. These molecules combine with \_\_\_\_\_ groups from \_\_\_\_\_ to form \_\_\_\_\_.

The \_\_\_\_\_ molecule released from the Calvin cycle is used to form \_\_\_\_\_. This can be stored as \_\_\_\_\_ molecules.

\_\_\_\_\_ is reduced using \_\_\_\_\_ to form \_\_\_\_\_. One molecule of \_\_\_\_\_ leaves the cycle as a final product, while the other five molecules continue through the Calvin cycle. The five molecules go through a series of reactions to become \_\_\_\_\_, which is then used to fix more \_\_\_\_\_.

# The Calvin Cycle, Solution

Label the diagram of the Calvin cycle and fill in the blanks of the summary.



Three molecules of carbon dioxide combine with ribulose biphosphate (RuBP) with the help of the enzyme rubisco. This forms an unstable intermediary compound that splits to form six molecules of 3-phosphoglycerate (PGA). These molecules combine with phosphate groups from ATP to form 1, 3-bisphosphoglycerate.

The G3P molecule released from the Calvin cycle is used to form glucose. This can be stored as starch molecules.

1, 3-bisphosphoglycerate is reduced using NADPH to form glyceraldehyde 3-phosphate (G3P). One molecule of G3P leaves the cycle as a final product, while the other five molecules continue through the Calvin cycle. The five molecules go through a series of reactions to become RuBP, which is then used to fix more carbon dioxide.