

## CALVIN CYCLE WORKSHEET

Name \_\_\_\_\_ Period \_\_\_\_\_

Fill in the blanks with the following words/terms:

Carbon fixation	RuBP	PGA	PGAL
C3 plants	stomata	C4 Plants	C4 pathway
CAM	ATP	NADP+	NADPH
CO <sub>2</sub>	stroma	ADP	light
Organic compounds (sugar)	light intensity	open	night
two	phosphate	C4 pathway	temperature
CAM pathway	4	3	closed
Day	0		enzyme

The purpose of the Calvin cycle is to fix \_\_\_\_\_. The Calvin cycle takes place in the \_\_\_\_\_. There are 3 steps to the Calvin cycle. In step 1, \_\_\_\_\_ is fixed by an enzyme called Rubisco. Rubisco adds CO<sub>2</sub> to RuBP to form 2 molecules of \_\_\_\_\_.

In step 2, 2 molecules of PGA are converted to 2 molecules of PGAL. Step 2 uses ATP and NADPH that were made during the \_\_\_\_\_ reactions. The number of molecules of ATP used in step 2 is \_\_\_\_\_. The number of molecules of NADPH used in step 2 is \_\_\_\_\_. When ATP is used, it is converted to \_\_\_\_\_. In step 2, each PGA molecule receives one \_\_\_\_\_ from ATP to produce PGAL. In step 2, ADP and NADP+ are formed, and then they can be used again in the \_\_\_\_\_ reactions to produce new ATP and NADPH.

In step 3, 2 molecules of PGAL are converted to either \_\_\_\_\_ or RuBP. Step 3 completes the Calvin cycle. RuBP is replenished, and then it can be used again to fix more \_\_\_\_\_.

In your own words, explain why the Calvin cycle is called a 'cycle'.

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