



Academic Activity

Chapter 6

Adhesives

You have been asked to determine the best adhesive to use on a project. As part of your research, you need to test four different adhesives with two different materials. Record your results in table format and use the information to run an analysis and write up a research summary.

Materials:

- 4 different adhesives (Some suggestions are white glues, wood glues, glue stick, epoxy, super glue, and spray adhesive. If you can only find one type of glue, use full strength for one and mix it down with different proportions of water for the other three.)
- 12 samples each of two materials (Some suggestions are paper, cardboard, aluminum foil, cloth, plastic wrap or sheeting, stone, masonry, and wood.)
 1. Write each of the adhesives in the first square on the top left of the four tables.
 2. Input your materials into the left column and across the top row of tables where the number appears.
 3. For each adhesive you are going to bind a sample of material 1 to itself, a sample of material 1 to material 2 and a sample of material 2 to itself.
 4. Check and record at the time intervals indicated in the table. If the samples are adhered and cured circle the *y* for yes. If not circle the *n* for no and check it again at the next indicated time.

1st Adhesive	1.	2.
1.	5 min y/n 30 min y/n 1 hr y/n 1 day y/n	5 min y/n 30 min y/n 1 hr y/n 1 day y/n
2.		5 min y/n 30 min y/n 1 hr y/n 1 day y/n

3rd Adhesive	1.	2.
1.	5 min y/n 30 min y/n 1 hr y/n 1 day y/n	5 min y/n 30 min y/n 1 hr y/n 1 day y/n
2.		5 min y/n 30 min y/n 1 hr y/n 1 day y/n

2nd Adhesive	1.	2.
1.	5 min y/n 30 min y/n 1 hr y/n 1 day y/n	5 min y/n 30 min y/n 1 hr y/n 1 day y/n
2.		5 min y/n 30 min y/n 1 hr y/n 1 day y/n

4th Adhesive	1.	2.
1.	5 min y/n 30 min y/n 1 hr y/n 1 day y/n	5 min y/n 30 min y/n 1 hr y/n 1 day y/n
2.		5 min y/n 30 min y/n 1 hr y/n 1 day y/n

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When your materials are completely cured, or you have reached the one-day mark, complete the analysis and summary.

5. Analyze each adhesive by answering the following questions.

a. Which adhesive took the least time to cure with material 1?

b. What was the curing time?

c. Which adhesive took the least time to cure with material 2?

d. What was the cure time?

e. Which adhesive cured material 1 to material 2 the fastest?

f. Test the bond strength to see if it holds. Was it a strong bond?

6. Write a summary of what you found out about each adhesive and how it worked with the materials. Cite the data from your table and make an adhesive recommendation for a project using the same materials based on your findings.

