

PROBLEM: Many of the CDs being used by students are used data CDs,DVDs, and video games (collectively referred to as CDs in this lesson). While using the CDs as wheels for mousetrap cars, several of the wheels are breaking very quickly without a significant amount of force being applied.

BACKGROUND: Non-destructive testing (NDT) may provide a possible solution to help identify CDs that have structural flaws that may be leading to their destruction. One such technique is Penetrant Testing using a fluorescent marker. To model this test, students will use fluorescent highlighters and a black light.

MATERIALS:

- CDs
- Yellow and orange highlighters
- Black Light or UV light source
- Magnifying lens
- Paper Towels

PROCEDURE:

1. Select CD and cover surface with a highlighter.
2. Lightly wipe off excess highlighter ink.
3. Turn of classroom lights and turn on blacklights.
4. Observe for areas on the CD where the penetrant (ink) has accumulated; highlighting cracks in the CD.