

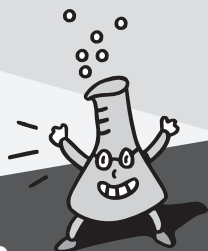


Mirror Messages

Can you crack the secret code?

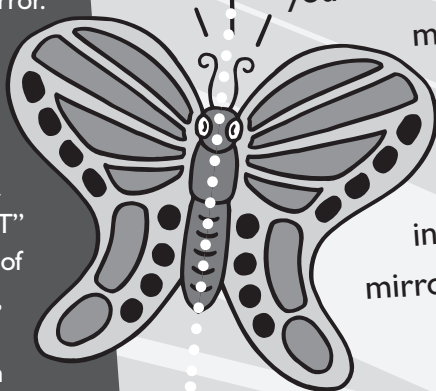
What You Need

- a mirror
- 2 sheets of white paper
- a felt tip pen
- a friend



Science Scoop

Mirror writing makes a great secret code because some letters reflected in a mirror look **really different** than they do in real life. A capital **R** will always appear as an **Я** in a mirror. However, some letters look like they **don't change** at all. Write the word "TOT" in capital letters on your paper. What happens when it is **reflected** in the mirror? It looks the same, right? Draw a **line down the center** of the letters "T" and "O." They look the same on either side of the line. Just like the two sides of a butterfly, these letters are **symmetrical** and that's why they **don't appear to change** in the mirror.



Write a **secret mirror message!** Start by **writing** a short sentence on a piece of paper. Next, **hold** your message up to a mirror. Now **look** in the mirror, and **copy** what you see onto a new piece of paper. **Give** the message to your friends and see if they can **figure out** what it says. Some people think that letters **appear backwards** in a mirror but they **don't**. Here's how you can see what happens: **Write** your message on white paper with a black felt tip pen. **Turn** the paper over and the letters will **show through** the way they would look reflected in a mirror. If you **hold** this up to a mirror, the letters **look** normal.



Keep experimenting with mirror messages. What **other words** can you write that look the **same in the mirror** as they do written on the page? What happens with **numbers**? With most secret codes, once you figure out the **pattern** of the words or letters you can decode the message. For more practice, try the **Doorman's Code** activity at pbskids.org/zoom.

Sent in by Candace of Fort Wayne, IN

Send your ideas to



Dear ZOOM

Here's what happened when I tried Mirror Messages:



Write or draw here.



Send an e-mail:
pbskids.org/zoom/sendit

Then instantly print out a copy of ZOOMerang—a newsletter filled with cast trivia and lots of fun ZOOM activities.



Or, send a letter:

ZOOM
Box 350
Boston, MA 02134

Don't forget to include your name and return address so we can send you a copy of ZOOMerang.



**The Weezie
Foundation**



©2005 WGBH Educational Foundation. All rights reserved. ZOOM and the ZOOM words and related indicia are trademarks of the WGBH Educational Foundation. Used with permission. ZOOM is produced by WGBH Boston. Funding for ZOOM is provided by the National Science Foundation, the Corporation for Public Broadcasting, The Weezie Foundation, and public television viewers. This material is based upon work supported by the National Science Foundation under Grant No. 0337323. Any opinions, findings, conclusions, or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation. All submissions become the property of ZOOM and will be eligible for inclusion in all ZOOMmedia. This means that we can share your ideas with other ZOOMers on TV, the Web, in print materials, and in other ZOOMways. So, send it to ZOOM. Thanks! Illustrations: Stephen Schudlich