

Will It Scan?

Error Detection and Correction
Learning Activity

Will It Scan? - Activity Instructions

Learning outcome: Learners will be able to develop an awareness for when error detection and correction is happening.

What you need:

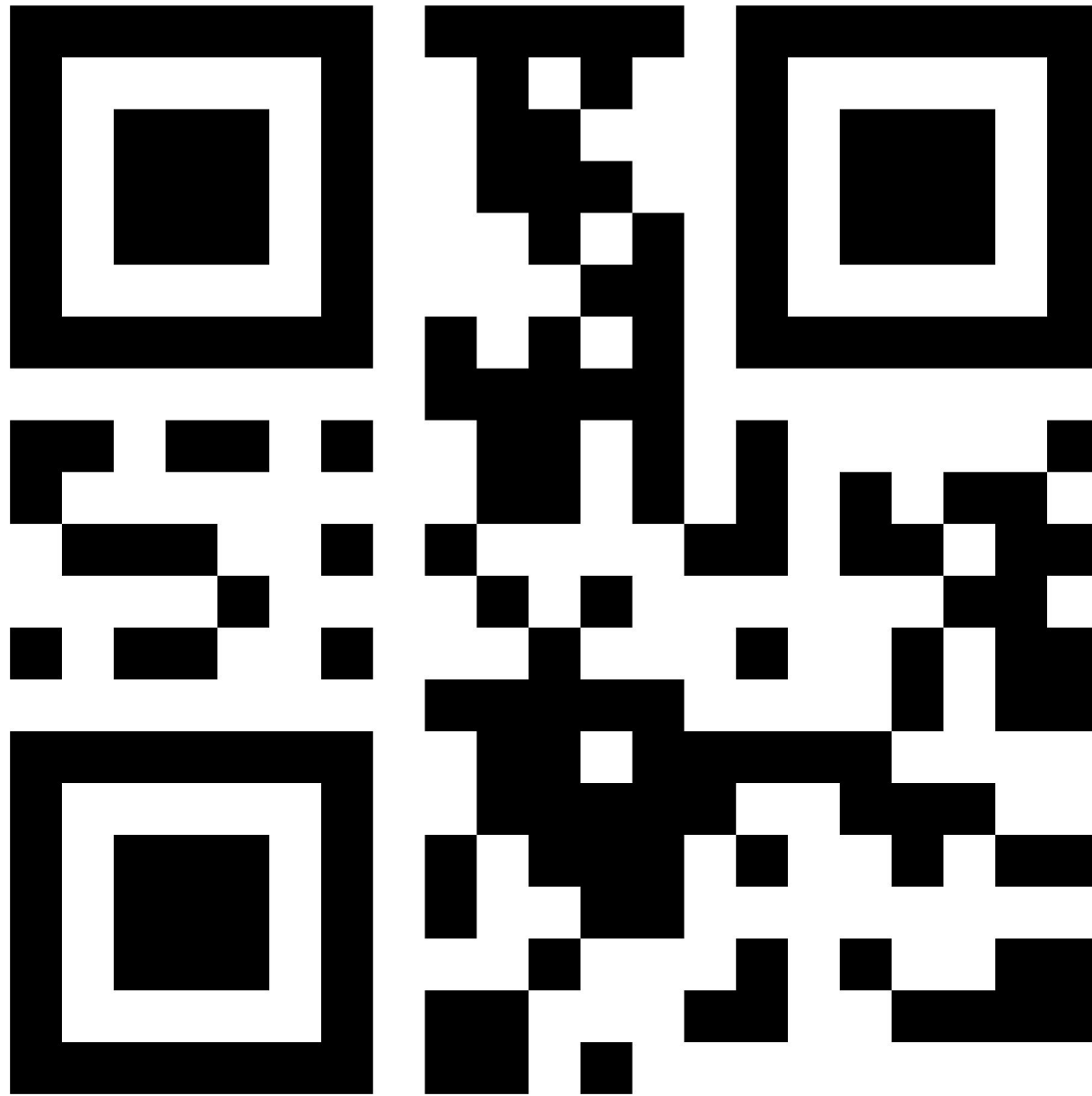
- Printed QR Codes
- QR Code scanner
- Black felt tip marker, whiteout (*note: pencils are not suitable*)

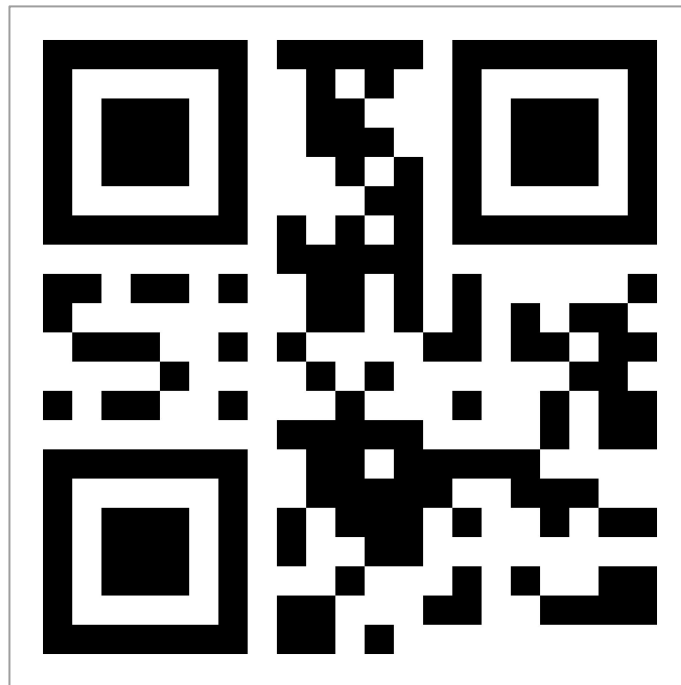
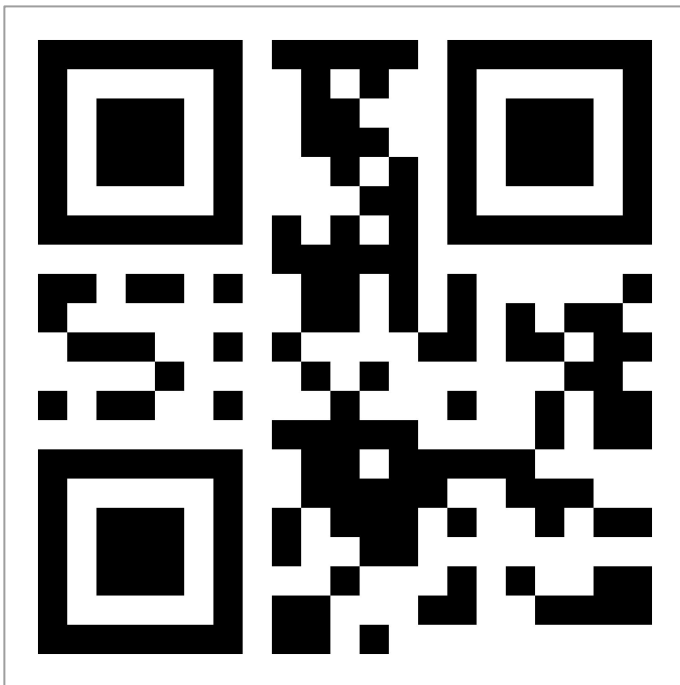
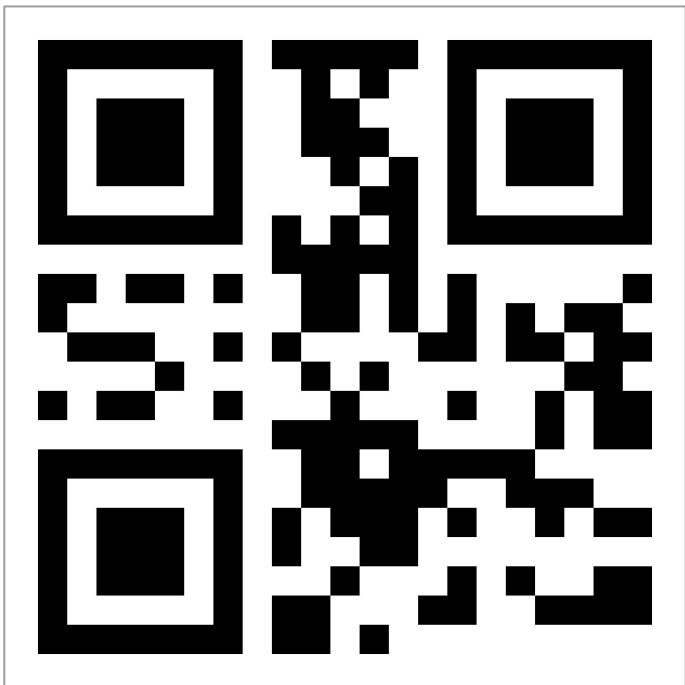
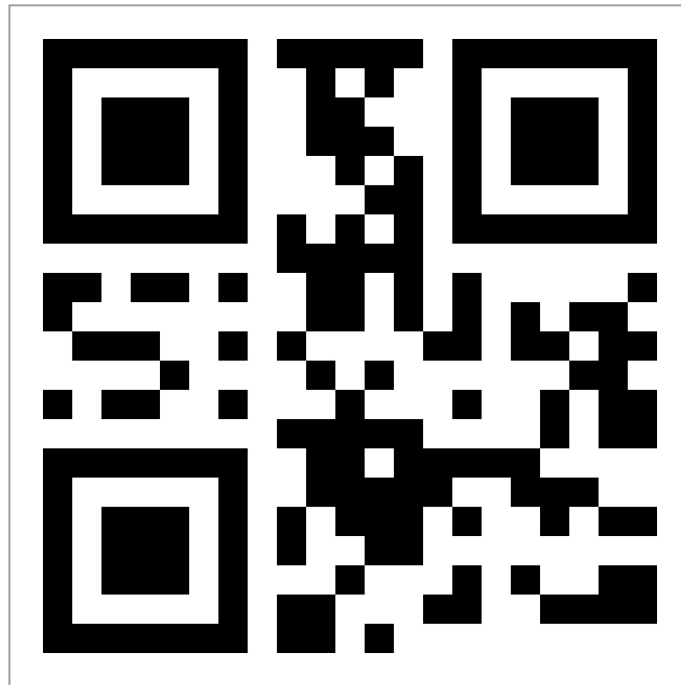
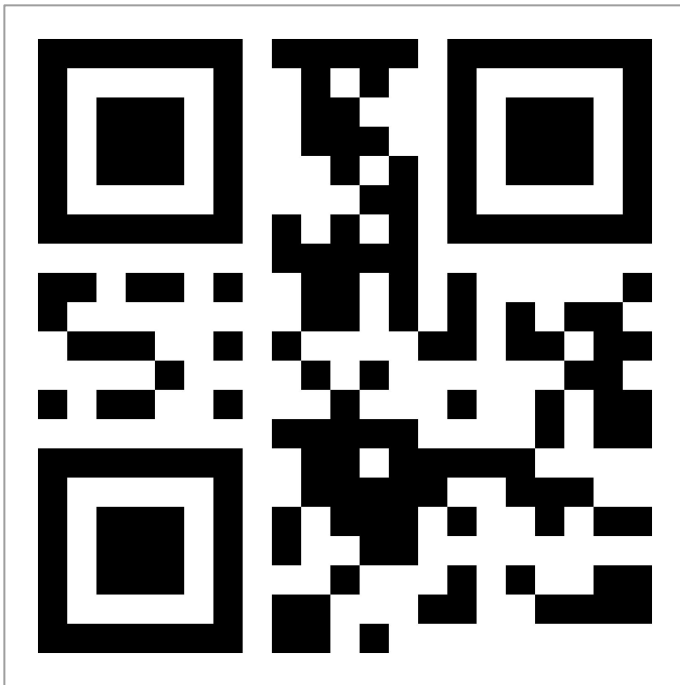
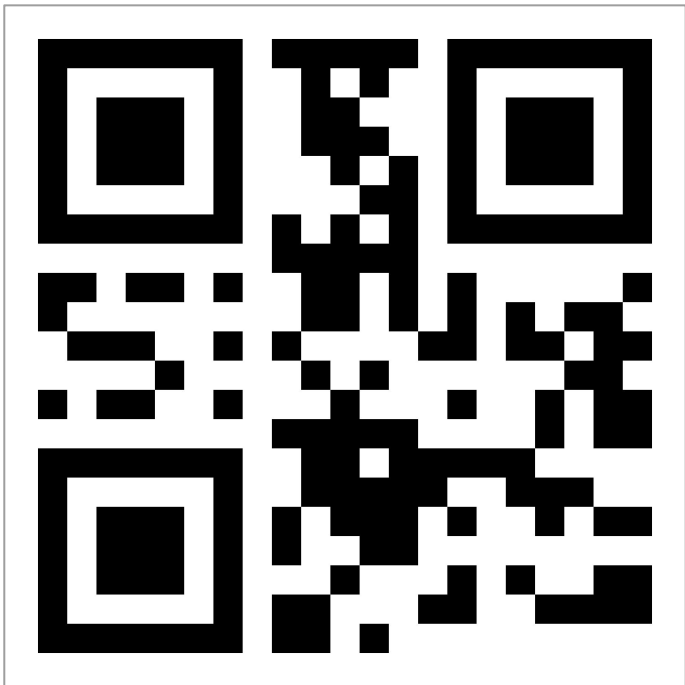
Below are a few pre-made QR codes for your convenience. You may choose to use any QR code that is suitable for your students.

Instructions:

1. Select the QR code you are going to share with your students. Print enough for students to work in pairs or independently.
2. Have a copy for yourself to demonstrate with. (*Think about what size and how you'll be able to display this so all students will be able to see.*)
3. Have a black felt tip marker and/or whiteout available for changing the small squares on the QR code to the opposite colour.
4. Scan a QR code in front of the class to show what message it contains.
5. Select one square that is not part of the 3 corner alignment squares to change, and change it, either a white square to black, or a black square to white. Point out that you are changing one of the bits in the message.
6. Using a QR scanner, scan the QR code. Does it still scan to give the same message?
7. Repeat steps 4 and 5 until the QR code does not scan. Students can do this carefully by changing one square at a time, and counting how many they have changed at the point it stops scanning.
8. Notice what happens when the QR codes does not scan and have a discussion on why the scanner behaved as it did.

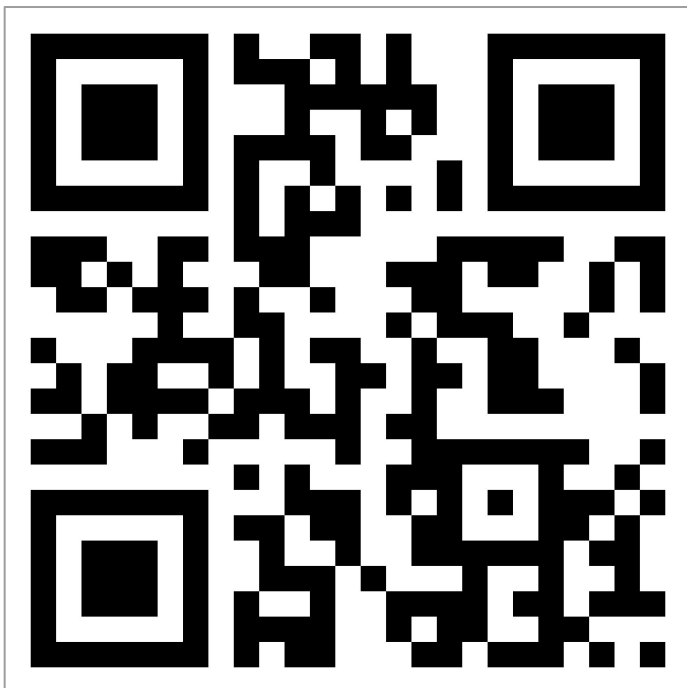
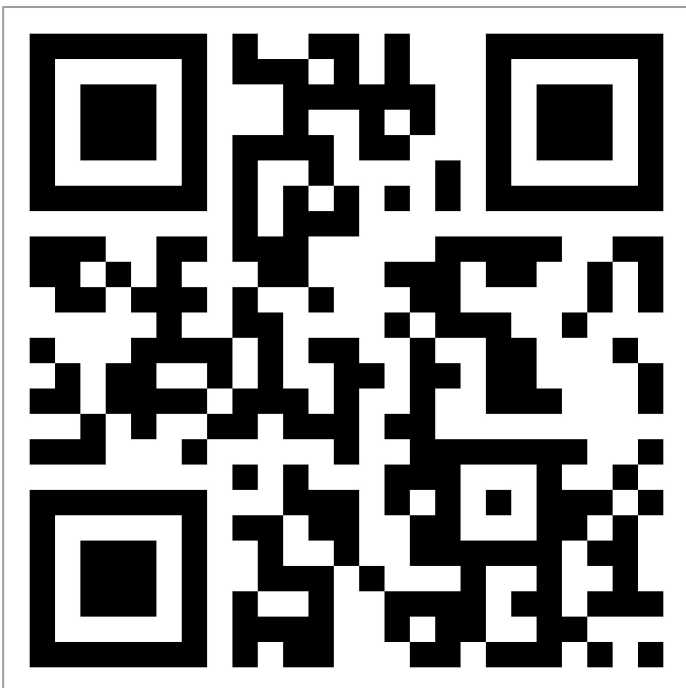
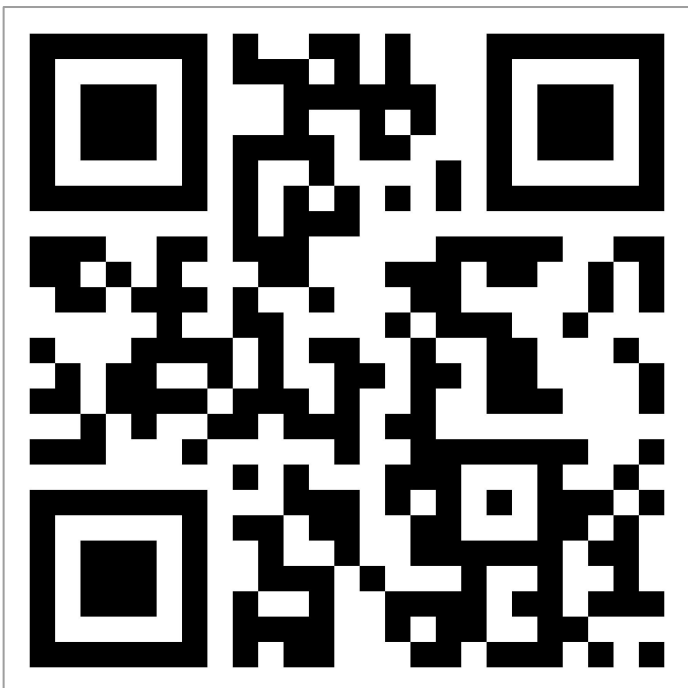
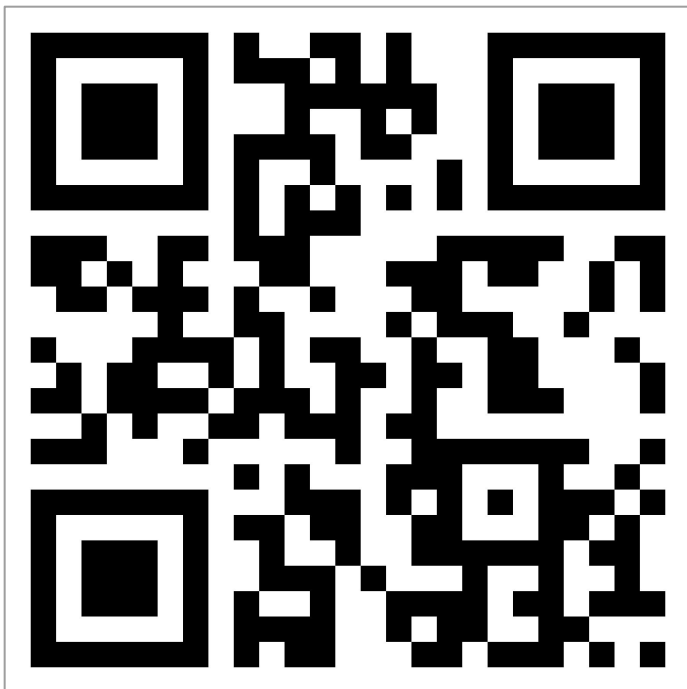
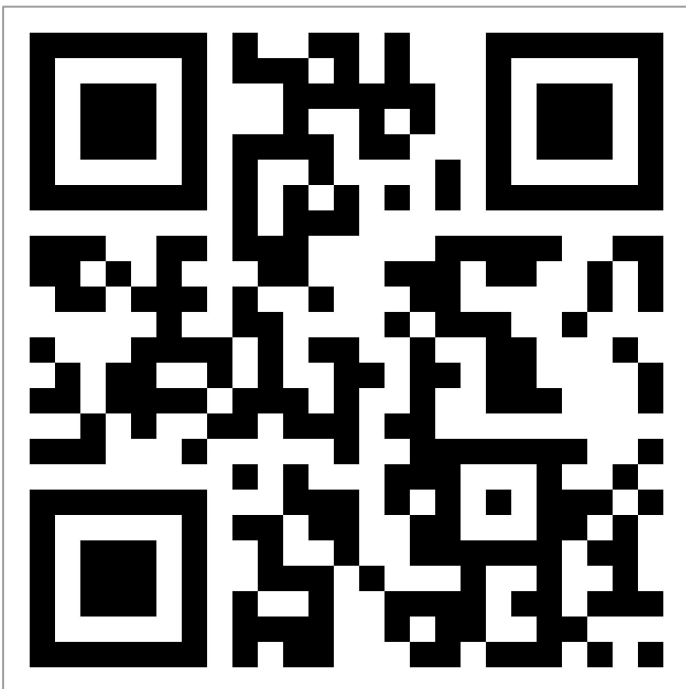
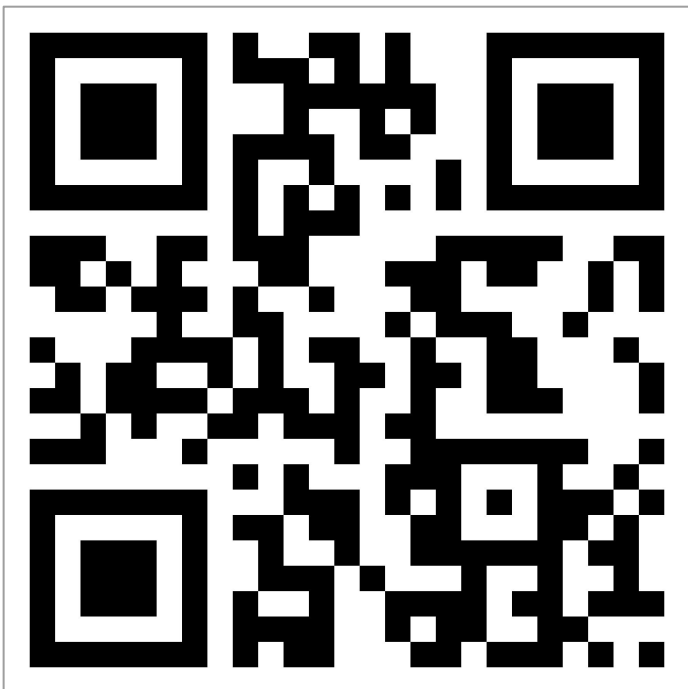
Arnold





**This
QR
code
still
works.**





You
haven't
broken
the QR
code
yet.





**“Sometimes
it is the
people no
one imagines
anything of
who do the
things that
no one can
imagine.”**

Alan Turing



