

Wristwatch Design for the Visually Impaired Activity – Guided Research – **Answer Key**

Directions

Define the following words or phrases and use them in a sentence that shows understanding:

Bioengineering	Definition: The application of engineering skills to solve problems in the fields of life science.	Looks like: Images will vary
	Sentence: <u>Bioengineering</u> has developed a number of advances in modern technology, including medicine, renewable energy, agriculture, etc.	
Biomedical Engineering	Definition: The application of engineering skills to solve problems in the medical field.	Looks like: Images will vary
	Sentence: Assistive devices are good examples of <u>biomedical engineering</u>.	
Assistive Device	Definition: A device that is designed to help a person carryout a given task.	Looks like: Images will vary
	Sentence: A wheelchair ramp is an example of an <u>assistive device</u>.	
Braille	Definition: A writing system used by people who are blind.	Looks like: Images will vary
	Sentence: <u>Braille</u> was developed to allow people with blindness to read using the sense of touch.	

Describe how to use an analogue watch to tell time.

When you tell time you first look at the shorter hand. This represents the hour. Secondly you look at the longer hand. This represents minutes. The hour is read by identifying the most recent whole number that the shorter hand has pointed to. The minutes can easily be read in groups of five represented by the numbers on the face of the clock.

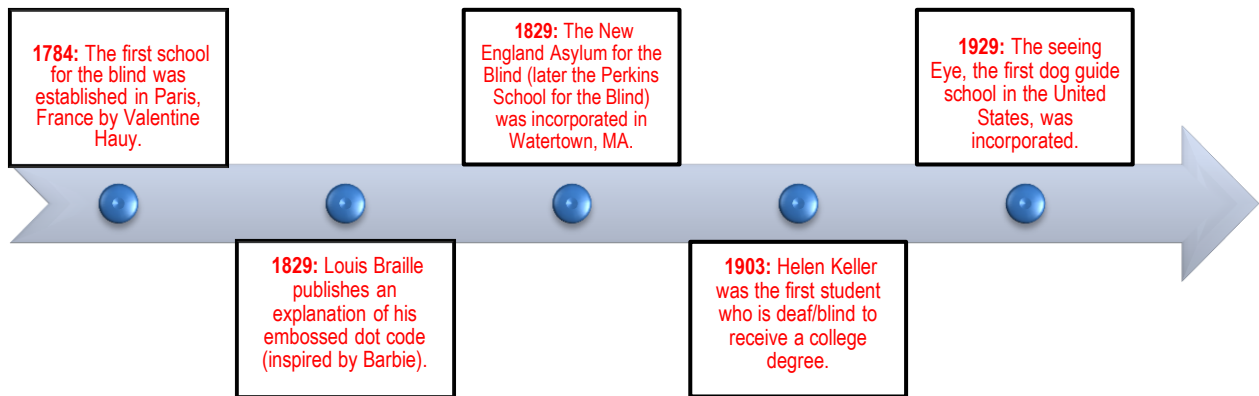
How does a wristwatch work?

A mechanical wristwatch is regulated by a spring that acts in the same way that a pendulum does in a stationary clock. The gear trains move the hands around the dial.

Describe how quartz is used to power wristwatches today.

Quartz watches use an electronic oscillator that is regulated by a quartz crystal to keep time. This crystal oscillator creates a signal with a very precise frequency making quartz watches considerably more accurate.

Identify five major changes/advancements in history that have impacted daily life for people with visual impairment. Identify the date and the person(s) responsible for the advancements.



Complete the chart below to show the Braille alphabet.

A	B	C	D	E	F	G	H	I	J
⠁	⠃	⠉	⠑	⠅	⠋	⠗	⠈	⠊	⠛
K	L	M	N	O	P	Q	R	S	T
⠅	⠋	⠍	⠎	⠏	⠕	⠖	⠗	⠘	⠞
U	V	X	Y	Z	and	for	of	the	with
⠥	⠧	⠨	⠣	⠚	⠠	⠠	⠠	⠠	⠠
ch	gh	sh	th	wh	ed	er	ou	ow	W
⠠	⠠	⠠	⠠	⠠	⠠	⠠	⠠	⠠	⠠