

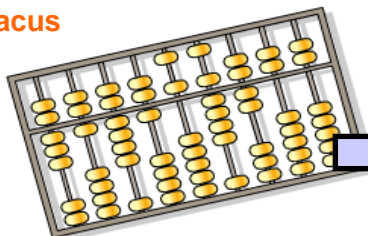
## EVOLUTION OR REVOLUTION

Most products develop in an **evolutionary** way. They slowly change into new forms over time, as designers produce variations on existing designs.

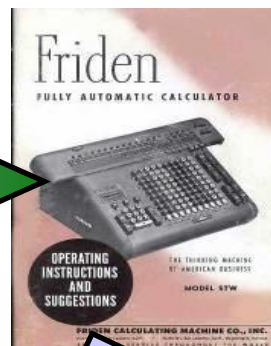
However, some products develop in a **revolutionary** way. An innovation or new technology results in a wholly new and original product that can have a big effect on society.

**TASK:** Under each calculator write whether each stage is an evolution or a revolution in calculator design?

Abacus



Mechanical calculator



Is each stage an evolution or a revolution in calculator design?



Modern scientific calculator



## EVOLUTION OF BICYCLE

1817

1870

Approx.  
1880

Approx.  
1890



A walking bicycle



The High Wheel Bicycle (Penny Farthing)



A pedal cycle with solid tyres



A pedal cycle with pneumatic tyres

## MARKET PULL AND TECHNOLOGICAL PUSH

Products are developed in response to two main influences:

### Market pull

A need or desire emerges in society. This prompts designers to begin to search for a solution to this 'gap in the market'.

For example, the increase in RSI (repetitive strain injuries) led to a need for padded mouse mats.



### Technological push

New developments in technology or improvements in knowledge stimulate new solutions to existing problems.



For example, new technology has led to mp3 players replacing personal CD players.

**Market pull** often causes products to develop in an evolutionary way.

- Consumers create the demand.
- Products usually evolve gradually from one form to another.
- The technology driving the product usually exists already.
- Products created from a market demand are often re-styled versions of older products.

**Technological push** tends to cause revolutionary development.

- A new technology becomes available.
- This technology offers new ways to solve problems, and creates opportunities to make wholly new products.
- New products are made which were not possible before the technological advancement.

**TASK:** Using your evolution timeline of (a) a mobile phone (B) a personal music device (Sony Walkman / MP3) if they have developed due to technological push and what the new technology allowed the product to do?

**TASK:** Research two products that have developed due to market pull (i.e Dyson Hoover)

**TASK:** Research two products that have developed due to technological push

**TASK:** Develop an evolution timeline of (a) a mobile phone (B) a personal music device (Sony Walkman / MP3) and list if each stage is evolution or revolution, market pull or technological push. Add images and dates if possible

