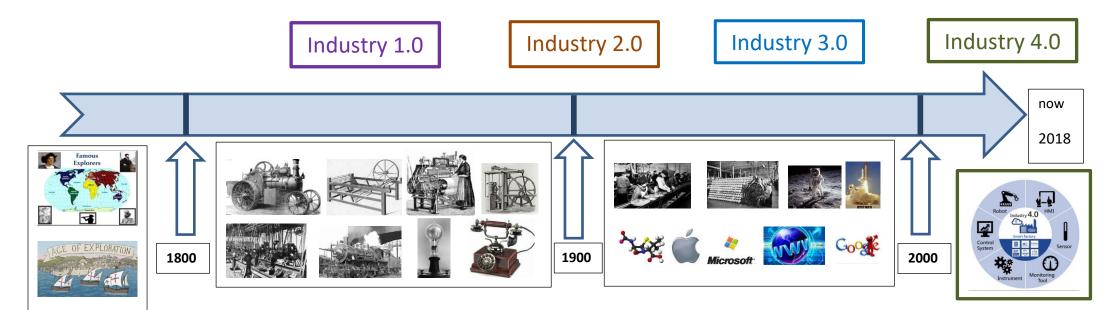
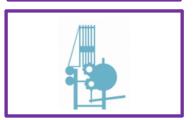
The Industrial Revolutions



Mechanisation

The first industrial revolution (1.0) was the mechanisation of production using water and steam power.



Electrification

The second industrial revolution (2.0) then introduced mass production with the help of electric power.



Automatisation

The third industrial revolution (3.0) used electronics and IT to improve automations of manufacturing.

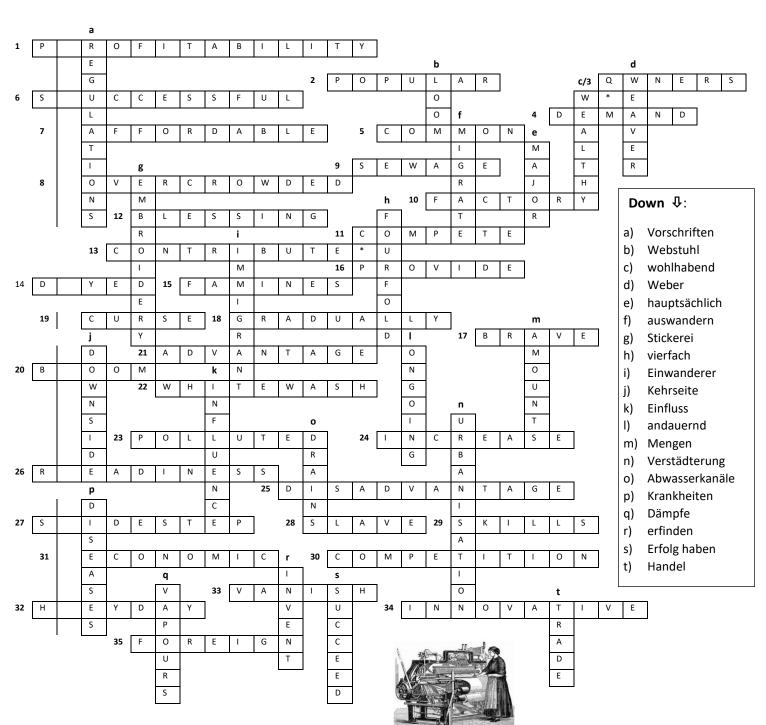


Digitalisation

The fourth industrial revolution (4.0) is based on Cyber-physical systems (CPS).



Twists & Turns WS 5 KEY



Across ⇒:

1)	Wirtschaftlichkeit	8) überfüllt	15) Hungersnöte	22) beschönigen	29) Fähigkeiten
2)	beliebt	9) Abwasser	16) bereitstellen	23) verschmutzt	30) Wettkampf
3)	Besitzer	10) Fabrik	17) tapfer, mutig	24) ansteigen	31) wirtschaftlich
4)	Nachfrage	11) wettstreiten	18) schrittweise	25) Nachteil	32) Glanztage
5)	üblich	12) Segen	19) Fluch	26) Bereitschaft	33) verschwinden
6)	erfolgreich	13) beitragen	20) florieren	27) ausweichen	34) neuartig
7)	erschwinglich	14) gefärbt	21) Vorteil	28) Sklave	35) ausländisch

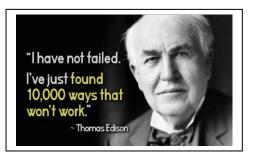
owners foreign fourfold famines dyed drains popular polluted major loom invent gradually factory economic diseases curse brave boom blessing overcrowded ongoing migrate heydays embroidery downside disadvantage demand contribute competition provide profitability influence compete common amounts advantage innovative increase immigran readiness affordable

Twists & Turns WS 6a

The Inventor Quiz

Who invented these inventions in the 19th century? Answer these questions correctly and you will get an English proverb.

		N	О	т	Н	ı	N	G	*	V	E	N	T	U	R	E	D	*	N	0	т	н	ı	N	G	*	G	Α	ı	N	Ε	D			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
L	31	Who	tou	nd a	way	to c	onve	rt iro	n ınt	o ste	el in	1854	l ?					a) James Starley (T)					b) Henry Bessemer (D)					c) ^r	c) Martin Heinrich (L)						
}	30										L	a) Louis Braille (V) a) Mary Treat (E) a) Georg Wander (E)					b) Henri Néstle (I)					7	1												
ŀ	29																Γ	b) Clara Barton (T)						c) Marie Curie (N) c) Julius Maggi (Y)											
-	28																	b) Samuel Morse (I)						c) J. L. Baird (M)											
ŀ	27												L	a) Mr Volta (A)					b) Mrs Ampère (W)					1	c) Luigi Galvani (I)										
ŀ	26													Γ	a) Natrium (O)					b) Aluminium (G)						c) Magnesium (S)									
ŀ	25														a) Louis Pasteur (Y)					b) Agatha Christie (T)						c) James Chalmers (*)									
ŀ	24													L	a) John Walker (G)					b) Josef Ressel (R)						c) Joseph Henry (B)									
ŀ	23										'Asp	irin' t	abl	et in 1	L853	?	Γ	a) Justus von Liebig (J)					b) Alexander Parkes (L)						c) Charles Gerhardt (N)						
L	22							omas								_		a) jelly bears (T)					b) chewing gum (I)						c) ice cream (A)						
ŀ	21							l in 1									L	a) Nicolas Appert (H)					b) Napoleon Bonaparte (T)					1							
ŀ	20							olver									Γ	a) D. M. Williams (C)					b) P. + W. Mauser (N) b) Nanoleon Ronanarte (T)						c) Samuel Colt (T) c) Peter Barlow (U)						
L	19							nstitc	Ū		hine	in 18	93?	•				a) Isaac Singer (P)					b) K. F. Gegauf (O)						c) Elias Howe (F)						
-	18							oca C			-							a) teacher (U)					b) chemist (N)						c) doctor (M)						
	17	7 Who was the inventor of Sherlock Holmes and his tricky cases?													a) Agatha Christie (Y)					b) Ian Rankin (L)						c) Arthur Conan Doyle (*)									
ŀ	16	6 Who invented the first photo camera in 1839?												L	a) W. F. Talbot (D)					b) K.P. Macmillian (A)						c) Ernst Litfass (R)									
ŀ	15	In 1849, concrete was developed. By who?											Г		stein (I		b) Joseph Monier (E)						c) Nancy Johnson (S)												
L	14	What did Christopher Sholes invent in 1868?													L		riter (I		b) the zipper (P)						c) the chewing gum (H)										
L	13	Who invented the 'Moving pictures' in 1894?													Г	a) the Brontë sisters (O)					b) Wright brothers (E)						c) Lumière brothers (U)								
ŀ	12	Who invented the first lift (elevator) in 1853?													a) Robert Yeates (D)					b) Elisha Graves Otis (T)						c) Joseph Gayetty (A)									
-	11	Who was called the 'Father of the railways' in the 19 th century?												L	a) George Stephenson (N)					b) Michael Faraday (B)						c) Robert Thomson (L)									
ļ	10	Whi	ch in	vent	ion b	aseo	d on	Edmo	ond C	artw	righ	t's in	itial	ideas	?		Г	a) the spinning frame (U)					b) the refrigerator (C)						c) the Power Loom (E)						
L	9	Who	inve	ente	d the	tele	phor	ne in	1876	?							L	a) Alexander Bell (V)					b) Henry Ford (N)						c) Samuel Morse (S)						
	8	Wha	at wa	s the	e nar	ne o	f the	first	mech	nanic	al sp	innir	ıg w	heel	(1764	4)?	Г	a) Spinning Vicky (A)					b) Spinning Jenny (*)						c) Spinning Brenda (N)						
	7	Which brothers could fly in their first hot air balloon in 1783?												a) Grimm (T)					b) Cartwright (Q)						c) Montgolfière (G)										
	6	Who prepared the first cornflakes in 1894?												a) W. K. Kellogg (N)					b) Peter Durand (K)						c) Ruth Wakefield (L)										
_	5	Who	inve	ente	d the	alte	rnati	ing cı	ırren	t (AC	C) mo	otor i	n 18	882?			_	a) Cla	ude Bu	ırdin (E)		b) Nik	ola T	esla (I)			c) Georg Simon Ohm (L)							
	4	Who created the first blue jeans in 1873?											a) Coco Chanel (U)					b) Levi Strauss (H)						c) Dolce&Gabbana (B)											
_	3	Who invented the first light bulb in 1879?										a) Thomas Edison (T)					b) Alexander Bell (D)						c) James Watt (R)												
L	2	Who	inve	ente	d the	dyn	amit	e in 1	1866	?							_	a) Alb	ert Ein	stein (I)		b) Samuel Colt (E)					c) A	c) Alfred Nobel (O)						
	1	Who improved the principle of the steam engine in 1776?											a) Alessandro Volta (E)					b) James Watt (N)						c) Karl Benz (M)											
_																								_											



 \Rightarrow "Wer nicht wagt, der nicht gewinnt."



Twists and Turns





ISA in Amriswil, BERNINA in Steckborn

The companies and factories had to be flexible. They succeeded when they were ready to take risks and to change their policy according to the situations.

- 'only' an 11-hour working day
- no Sunday work no night work
- no child labour (under 14)

You have lost your job.



Roll the dice and move backwards.

The waste water ran back to the rivers in untreated form and polluted the environment. Unhealthy working conditions for the workers.

They had to thread the needles.



Bürglen and Islikon (Greuterhof)

They started developing machines and were successful in engineering.

Jeans

- de Nîmes = Denim
- Gêne = from Genoa
- Levi Strauss designed the first Jeans production journey =



question

'Sewage' is polluted waste water that comes from factories and towns



'Indiennes' were a common paying method in the slave trade.

They were afraid that these cotton fabrics could harm their own economy.



Laces or embroidery

- Yarn must be spun and twisted.
- Yarn must be woven.
- Fabric is refined (dyed or printed).

Canada, Australia, New Zealand, India, South Africa,

Bahamas, Kenya, Guyana, Ceylon, Ghana, Hong Kong, Jamaica, Singapore, Sudan Trinidad, Zanzibar

'boom' as a noun: a period of economic growth

'boom' as verb = to grow quickly



Energy was generated by muscle-power. Many jobs were offered in the new factories and they hoped for a better live.



free question

Many European countries banned the import and the production of dyeing Indiennesbut Switzerland didn't.

You treated your workers badly.



Move backwards. The middle class was formed: factory owners, businessmen.



Spinning Jenny

Some immigrants were not interested in integrating into the Swiss way of life. They lived among their own kind and occupied jobs

This means that too many people live at the same place, causing probems.

Indiennes are soft printed cotton fabric from India.

They were

their job.

to live for afraid of losing



Dreadful places unemployed people or orphans.

- They got special goods from the British colonies.
- Trading companies
- Access to cheap raw material.
- · terrible working conditions
- long working days
- low wages • child labour

production and refinement of linen

