



# We are “Big Bang Legends”

Rolf Landua  
CERN



A fun & science collaboration



Rolf Landua “Big Bang legends” - CERN roadshow in Finland - 6 April 2017

# Disclaimers

Games cannot replace school education

Games do not prepare for assessment

Games must not be boring



## Children are curious



What is everything made of ?

Where does everything come from ?

We know the answers. Why wait until they are 18 years old\* ?

\*or never, if they leave science courses before?



Big Bang Legends



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Learning to use the language of science is fundamental to learning science



get used to the

## VOCABULARY

Hydrogen Boron Carbon  
Helium Element Lithium  
Beryllium .....
















Quark  
Particle  
Antimatter

Proton Neutron  
Atom Electron

Black Hole Star  
Supernova



## Instead of learning the names of 802 Pokemons ...

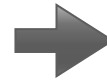
#460		Abomasnow	Grass	Ice	#334		Altaria	Dragon	Flying	#566		Archen	Rock	Flying	#610		Axew	Dragon	
#063		Abra	Psychic		#698		Amaura	Rock	Ice	#567		Archeops	Rock	Flying	#482		Azelf	Psychic	
#359		Absol	Dark		#424		Ambipom	Normal		#168		Ariados	Bug	Poison	#184		Azumarill	Water	Fairy
#617		Accelgor	Bug		#591		Amoonguss	Grass	Poison	#348		Armaldo	Rock	Bug	#298		Azurill	Normal	Fairy
#681		Aegislash	Steel	Ghost	#181		Ampharos	Electric		#683		Aromatisse	Fairy		<div>these are just the Pokemons starting with “A”</div>				
#142		Aerodactyl	Rock	Flying	#347		Anorith	Rock	Bug	#304		Aron	Steel	Rock					
#306		Aggron	Steel	Rock	#752		Araquanid	Water	Bug	#144		Articuno	Ice	Flying					
#190		Aipom	Normal		#024		Arbok	Poison		#531		Audino	Normal						
#065		Alakazam	Psychic		#059		Arcanine	Fire		#699		Aurorus	Rock	Ice					
#594		Alomomola	Water		#493		Arceus	Normal		#713		Avalugg	Ice						

these are just  
the Pokemons  
starting with "A"

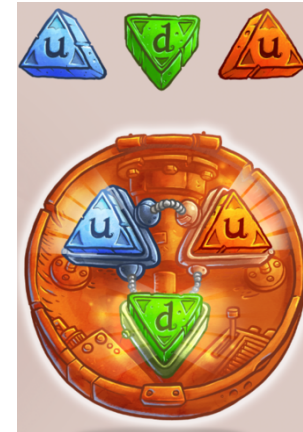


...why not find out about a few particles and 118 elements?

What is everything made of ?



Quarks



Proton

Elements



H



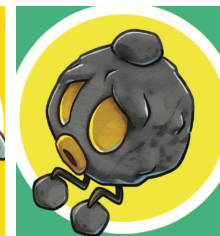
He



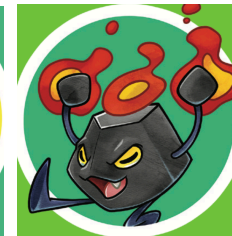
Li



Be



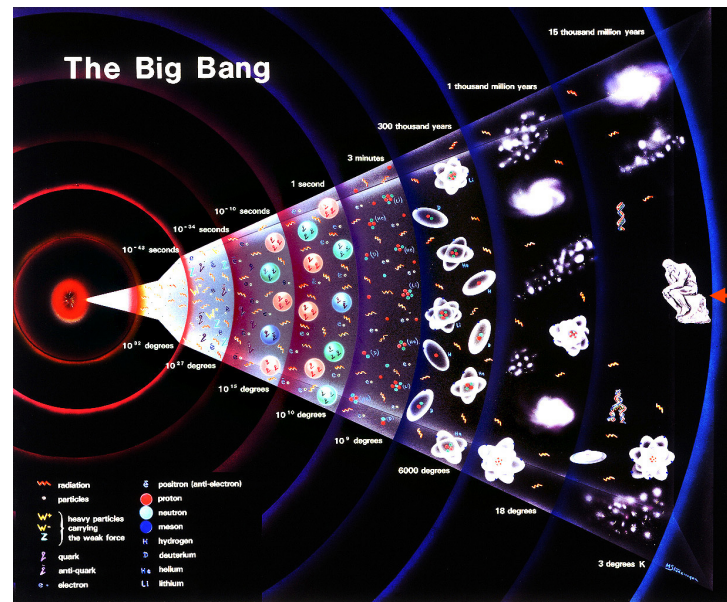
B



C



## Where does everything come from ?



— You are here

(and the particles in your body are 13.8 billion years old)

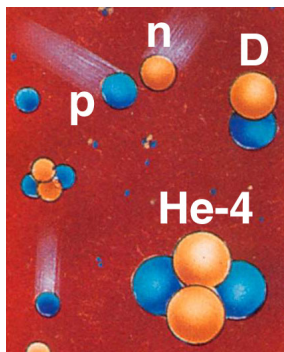
The Universe is a (very) big, self-assembling game (Lego-type)



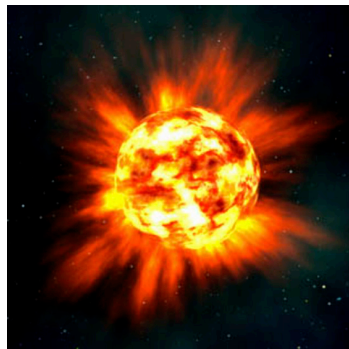
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## From protons and neutrons to Uranium (and beyond)

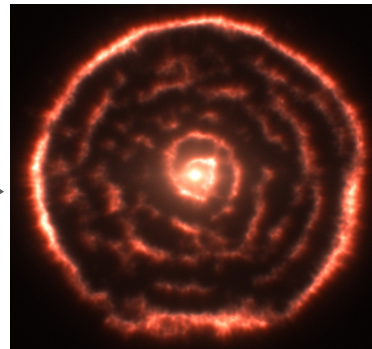
.... the game tells a story ...



Big Bang



First stars



Supernova



Planetary systems



