Concept mapping second screens to augment understanding of science on television

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Computer Science, UCL

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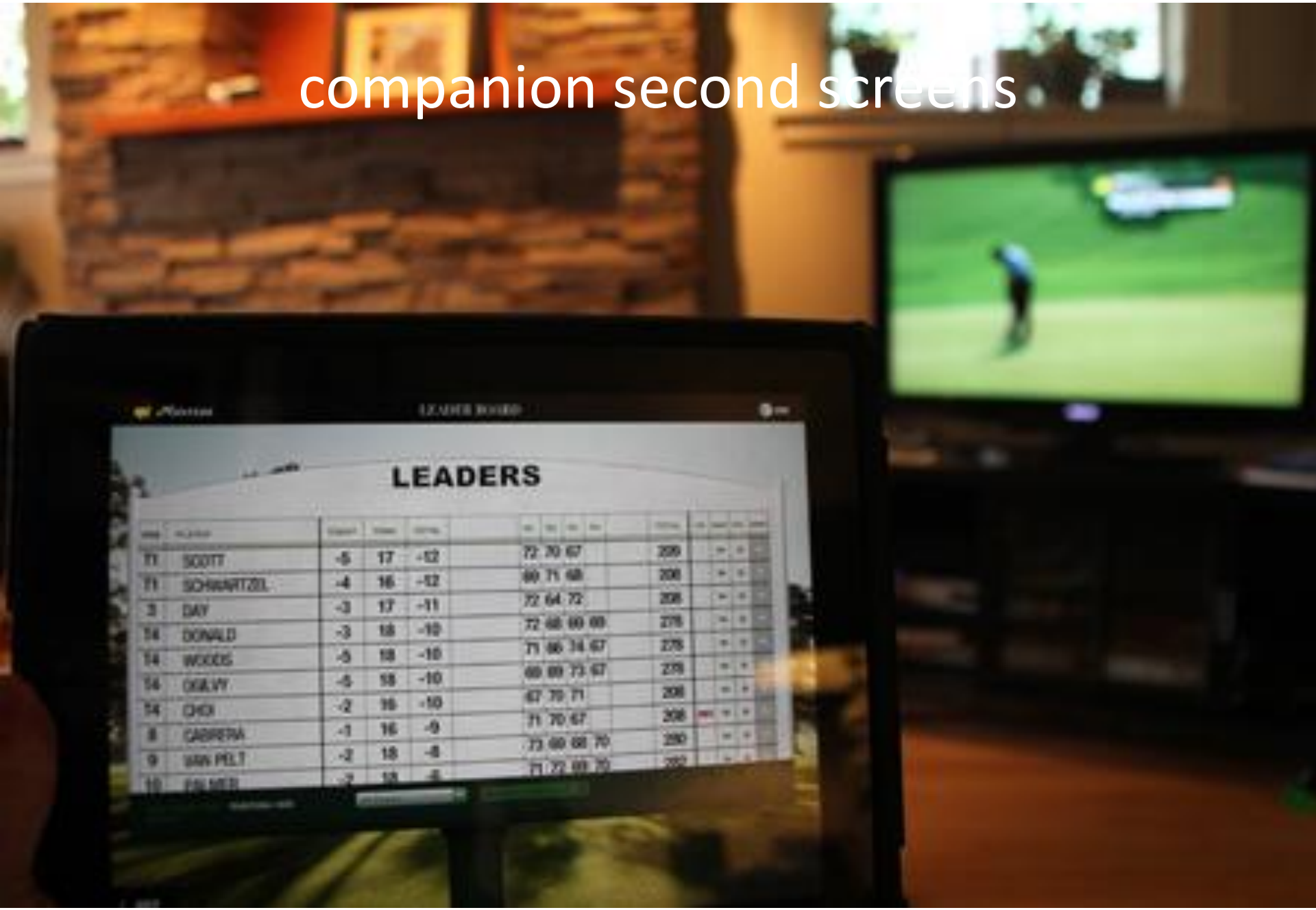
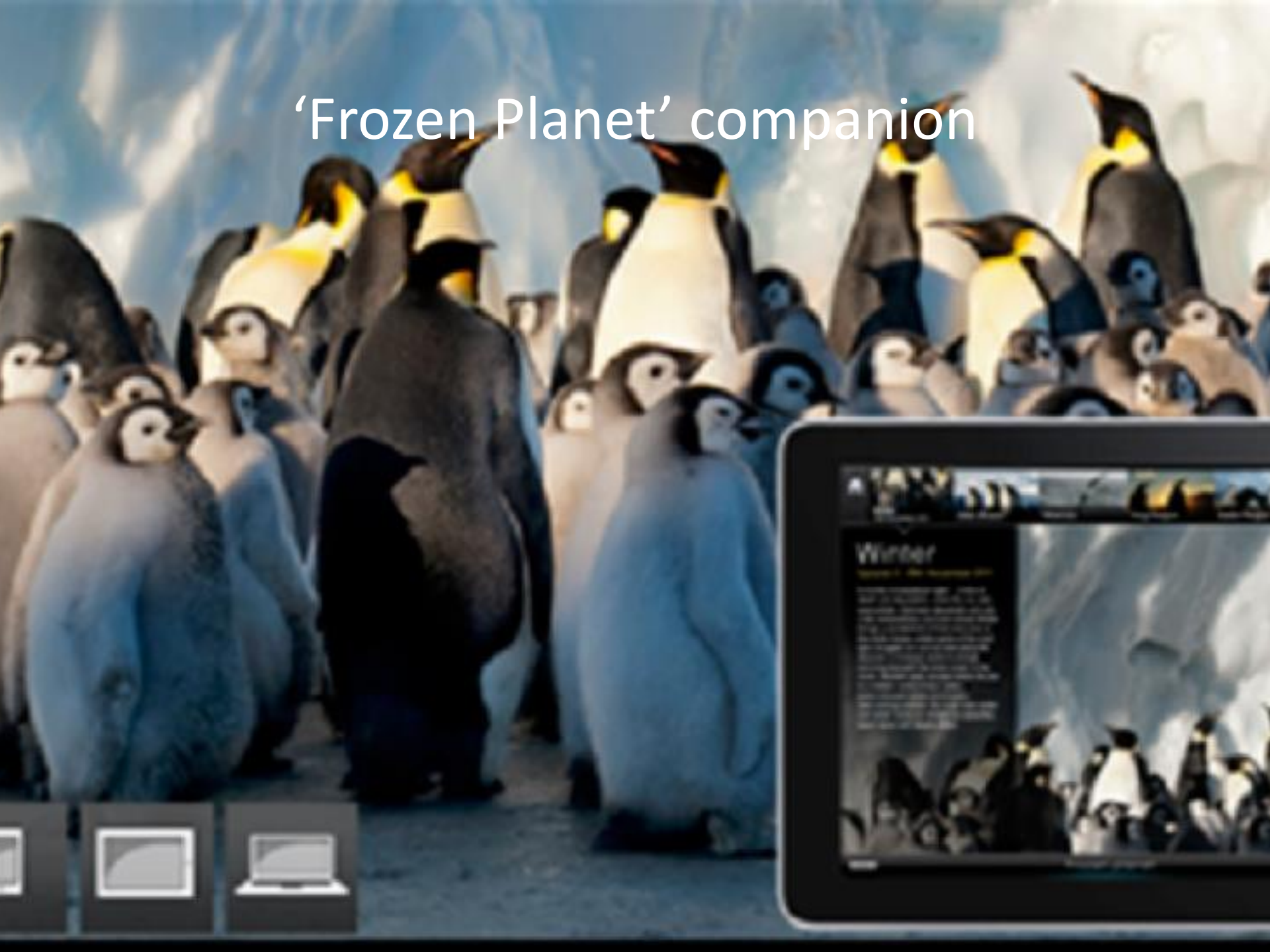
1

The Hillis Plot
Science, 2003

companion second screens



‘Frozen Planet’ companion



BBC's evaluation

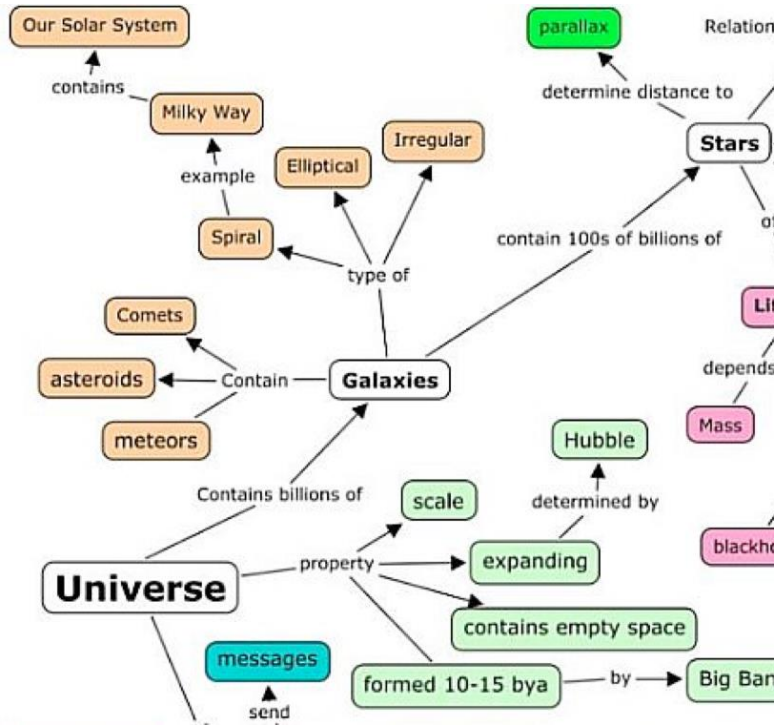
1. it broadened and deepened viewers' engagement with the programme content;
2. it allowed users a personalised viewing according to their interests;
3. it encouraged curiosity and shared discovery;
4. it provided additional but not excessive authoritative information;
5. it worked as a log of items of interest to a particular viewer and marked things to access later;
6. it particularly engaged 'pre-family' viewers (who sought more information) and children (who used it to continue learning journeys);
7. it could compete negatively for the viewer's attention and was ignored during highly visual parts of the programme;
8. smartphones rather than tablets were used to view the second screen during the programme, the converse for viewing the second screen later;
9. simply repeating the broadcast content was not valued and additional content was expected;
10. the second screen interaction should be user paced, not system paced.

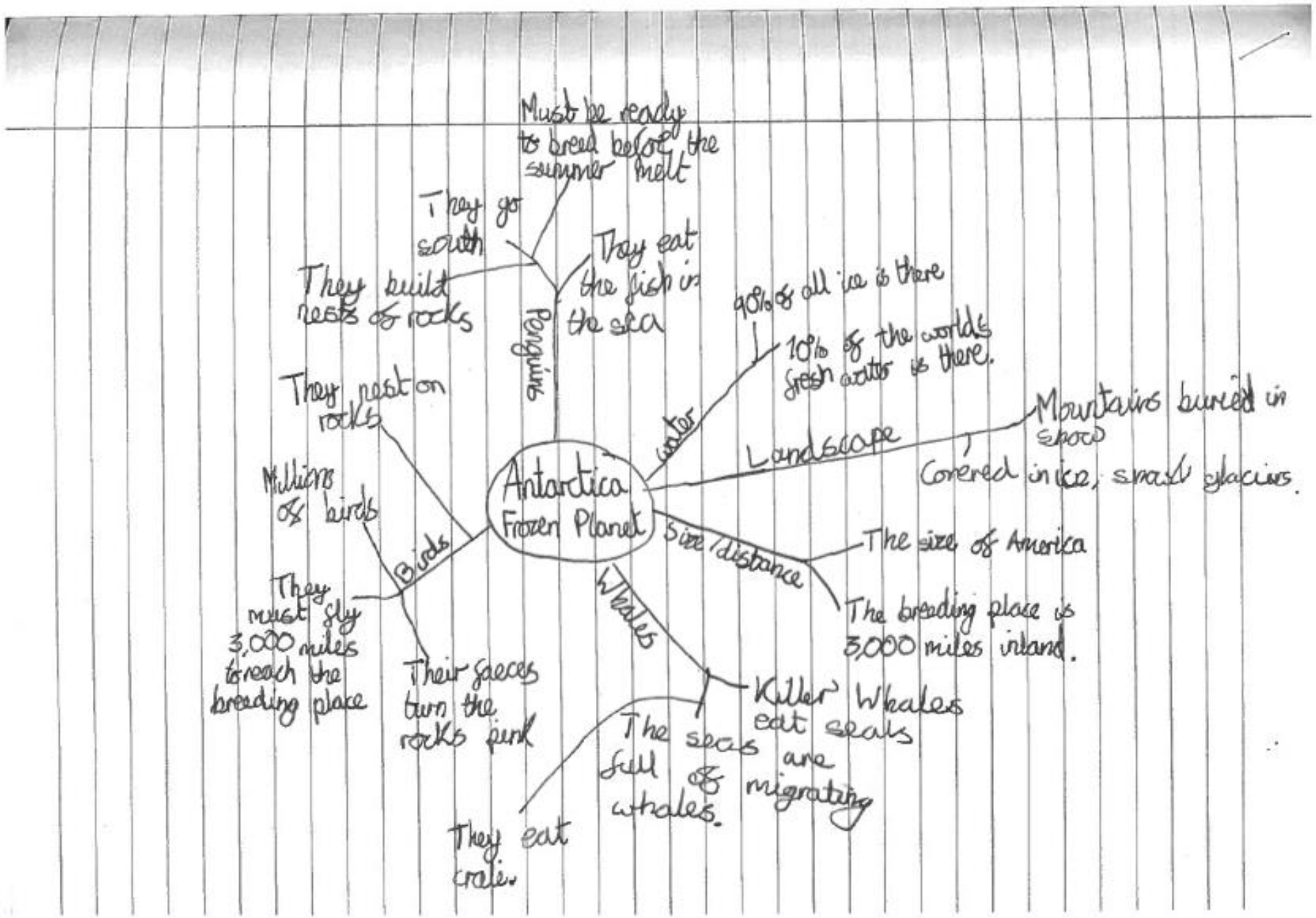
Concept mapping second screens

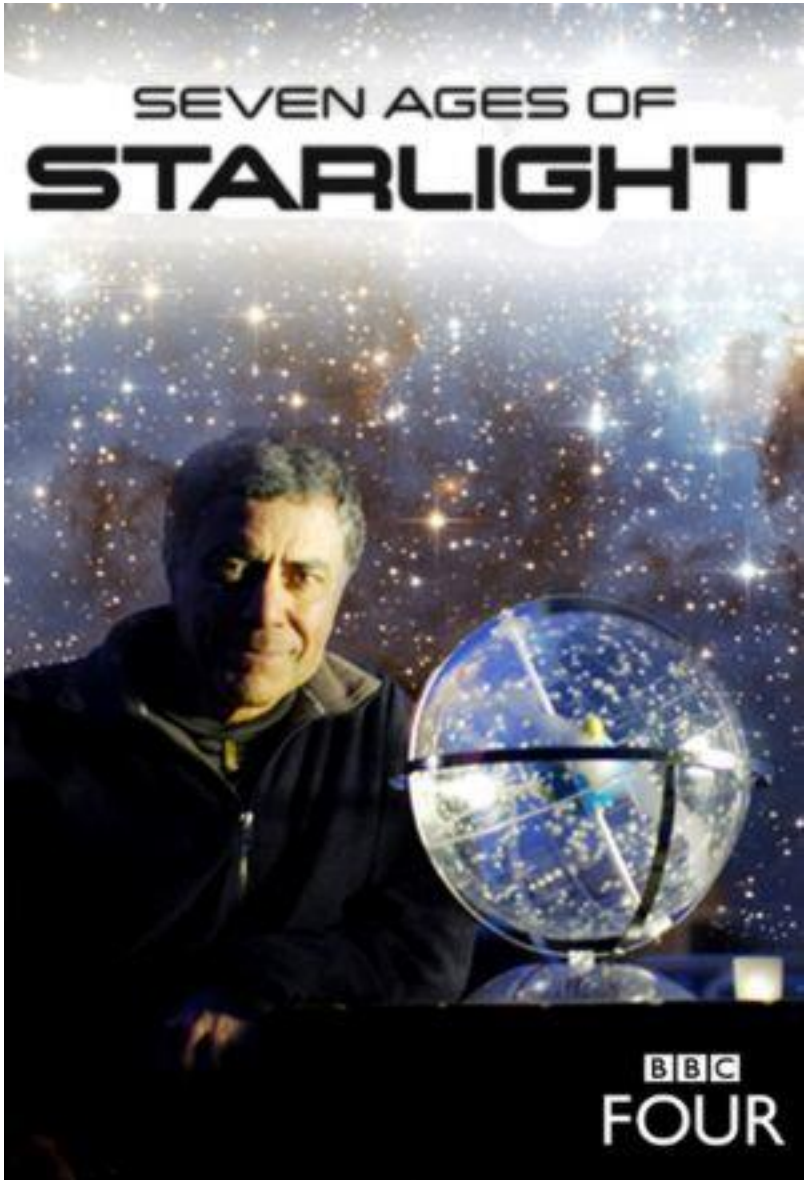
concept maps

- directed graphs, a form of semantic network
- used to capture and present knowledge
- used as a tool in science classes
- construct your own, read someone else's
- proven learning value (Nesbit & Adesope, 2006)

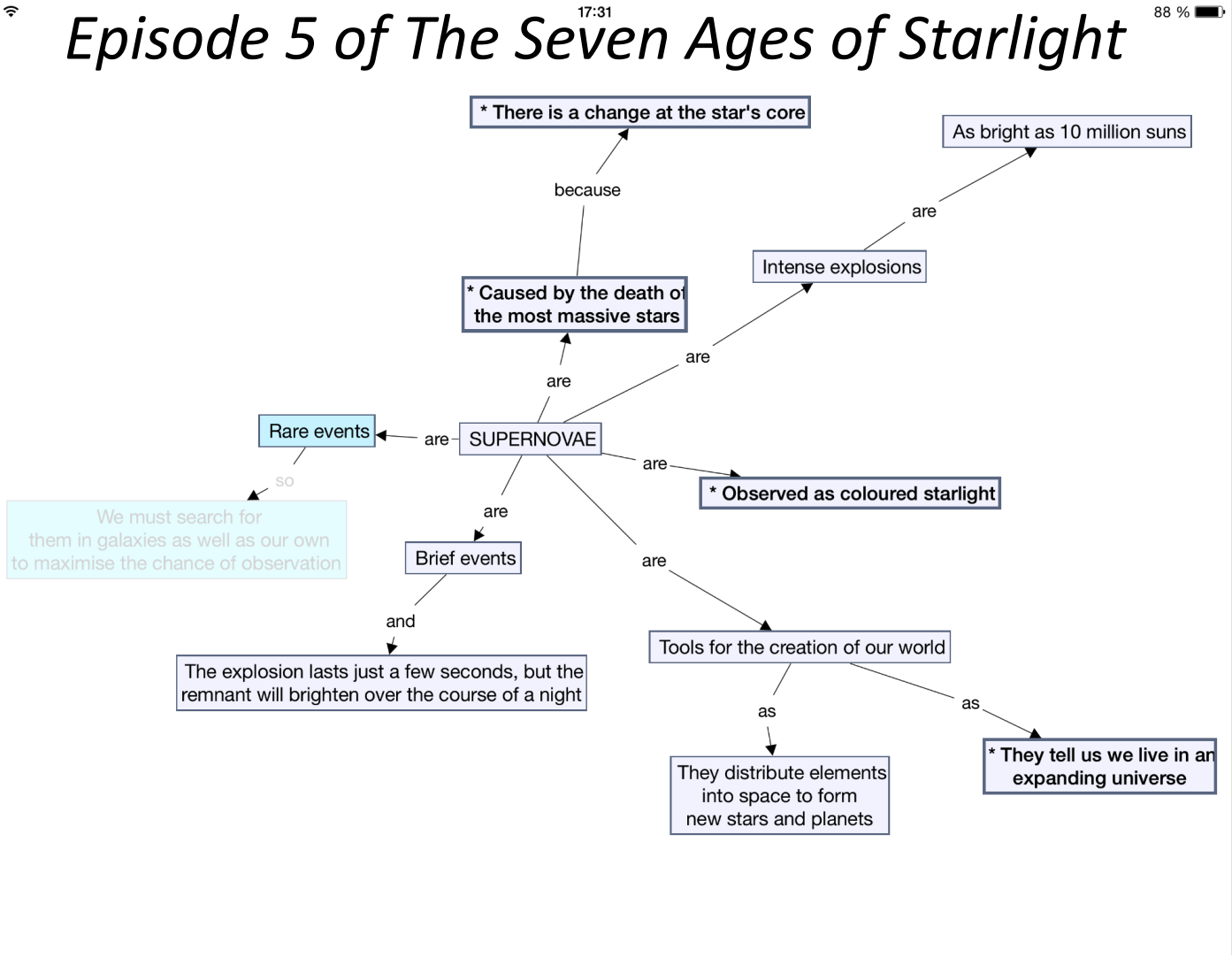
concept map a TV science programme?




Antarctica
Frozen Planet
Penguins
Must be ready to breed before the summer melt
They go south
They eat the fish in the sea
They build nests of rocks
Water
90% of all ice is there
10% of the worlds fresh water is there.
Landscape
Mountains buried in snow
Covered in ice, small glaciers.
Size / distance
The size of America
The breading place is 3,000 miles inland.
Whales
Killer Whales eat seals
The seas are full of migrating whales.
They eat krale.
Birds
They rest on rocks
Millions of birds
They must fly 3,000 miles to reach the breading place
Their faeces turn the rocks pink


SEVEN AGES OF
STARLIGHT
BBC
FOUR

Concept map of the first 4 minutes of *Supernovae, Episode 5 of The Seven Ages of Starlight*



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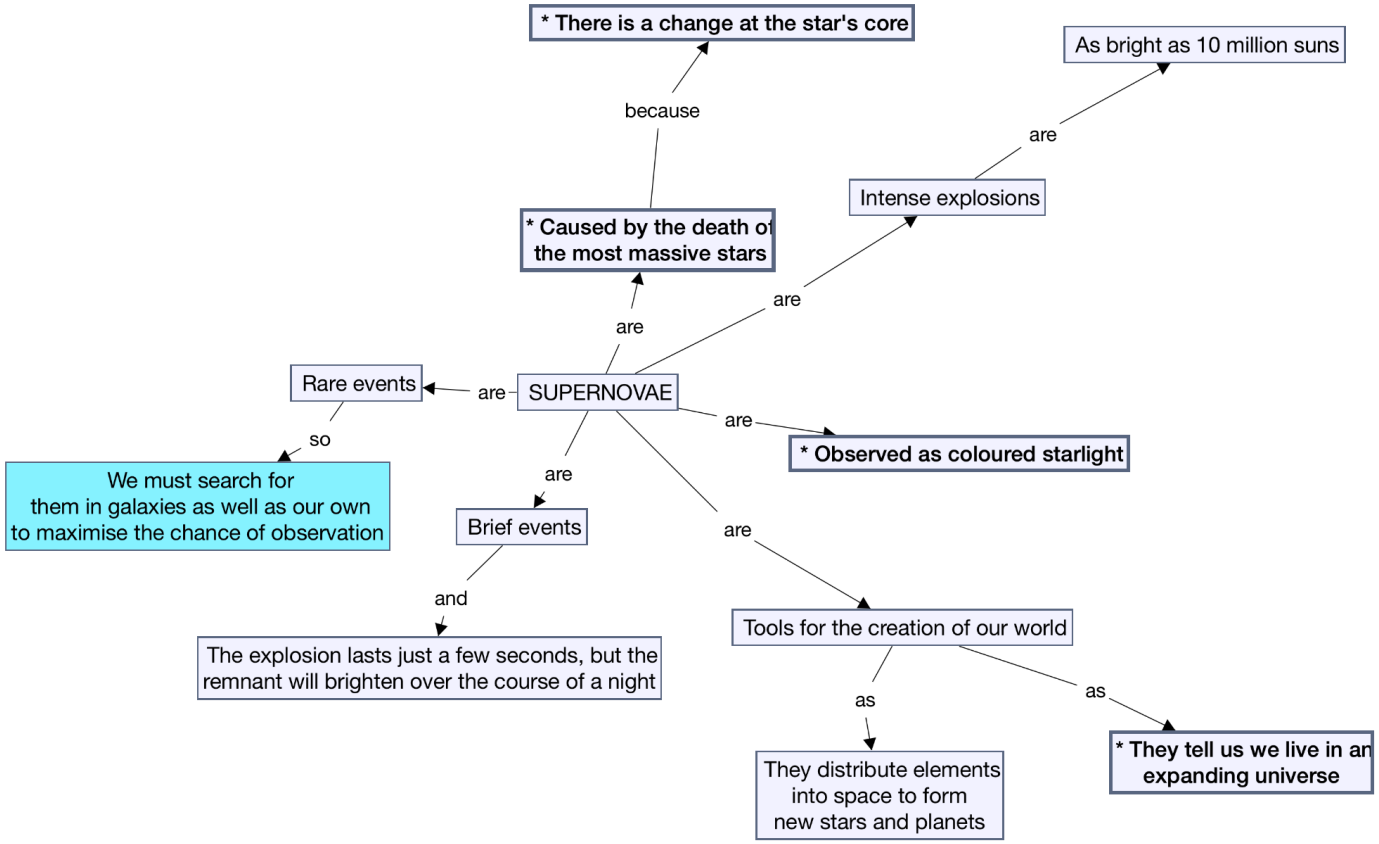
* There is a change at the star's core
because
As bright as 10 million suns
are
Intense explosions
* Caused by the death of the most massive stars
are
are
Rare events
are
SUPERNOVAE
are
* Observed as coloured starlight
so
We must search for them in galaxies as well as our own to maximise the chance of observation
are
Brief events
are
and
The explosion lasts just a few seconds, but the remnant will brighten over the course of a night
Tools for the creation of our world
as
as
They distribute elements into space to form new stars and planets
* They tell us we live in an expanding universe

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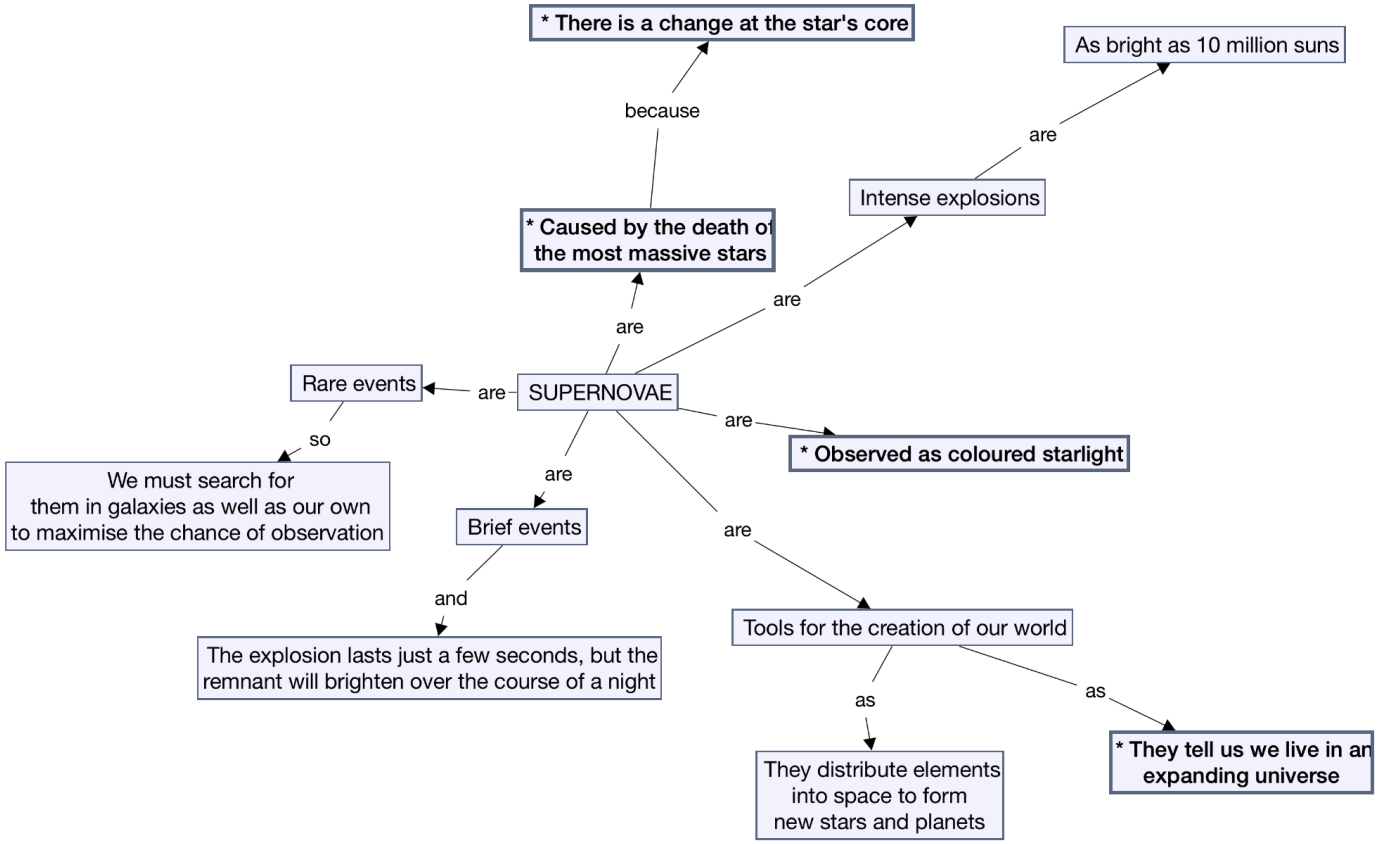
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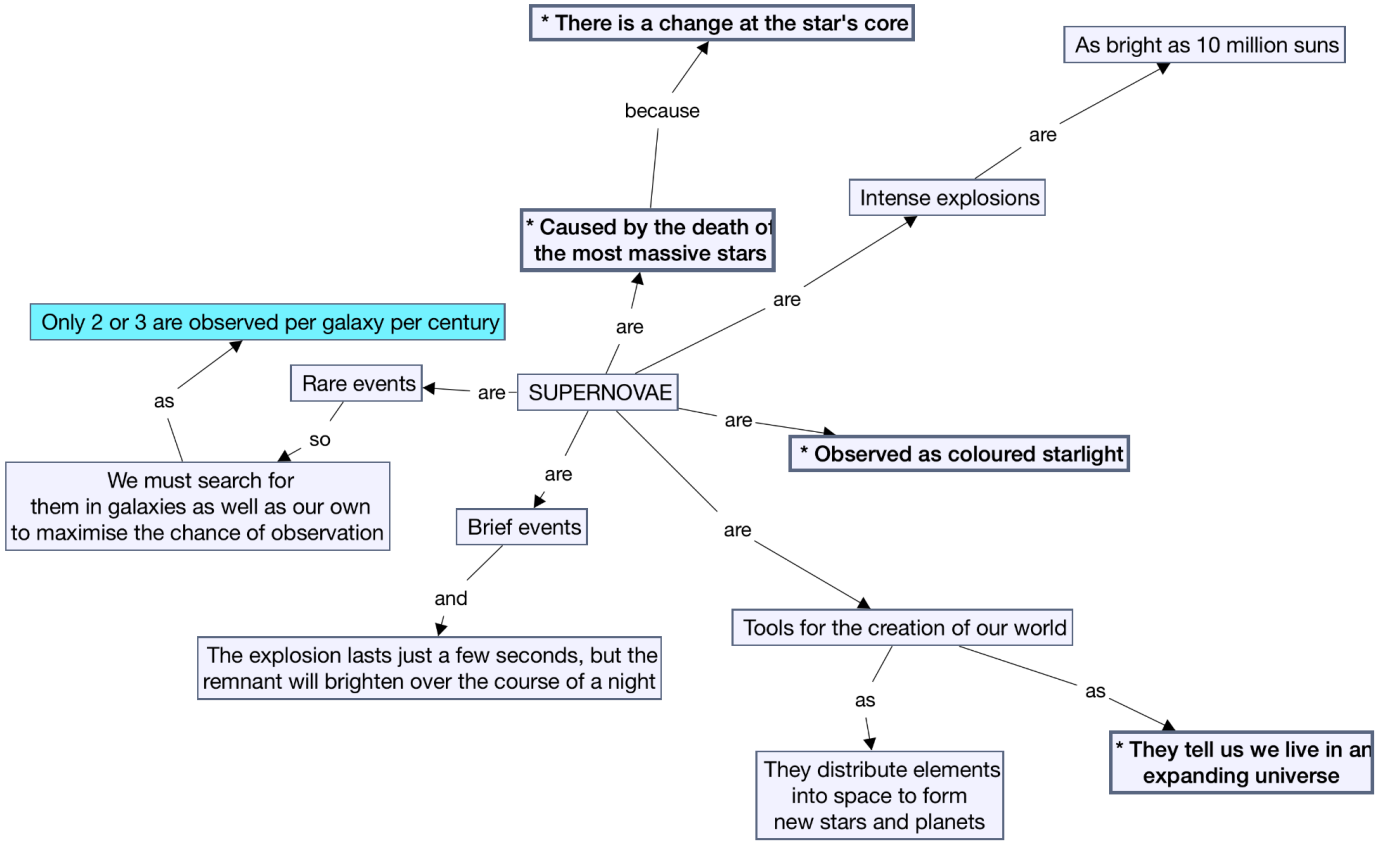
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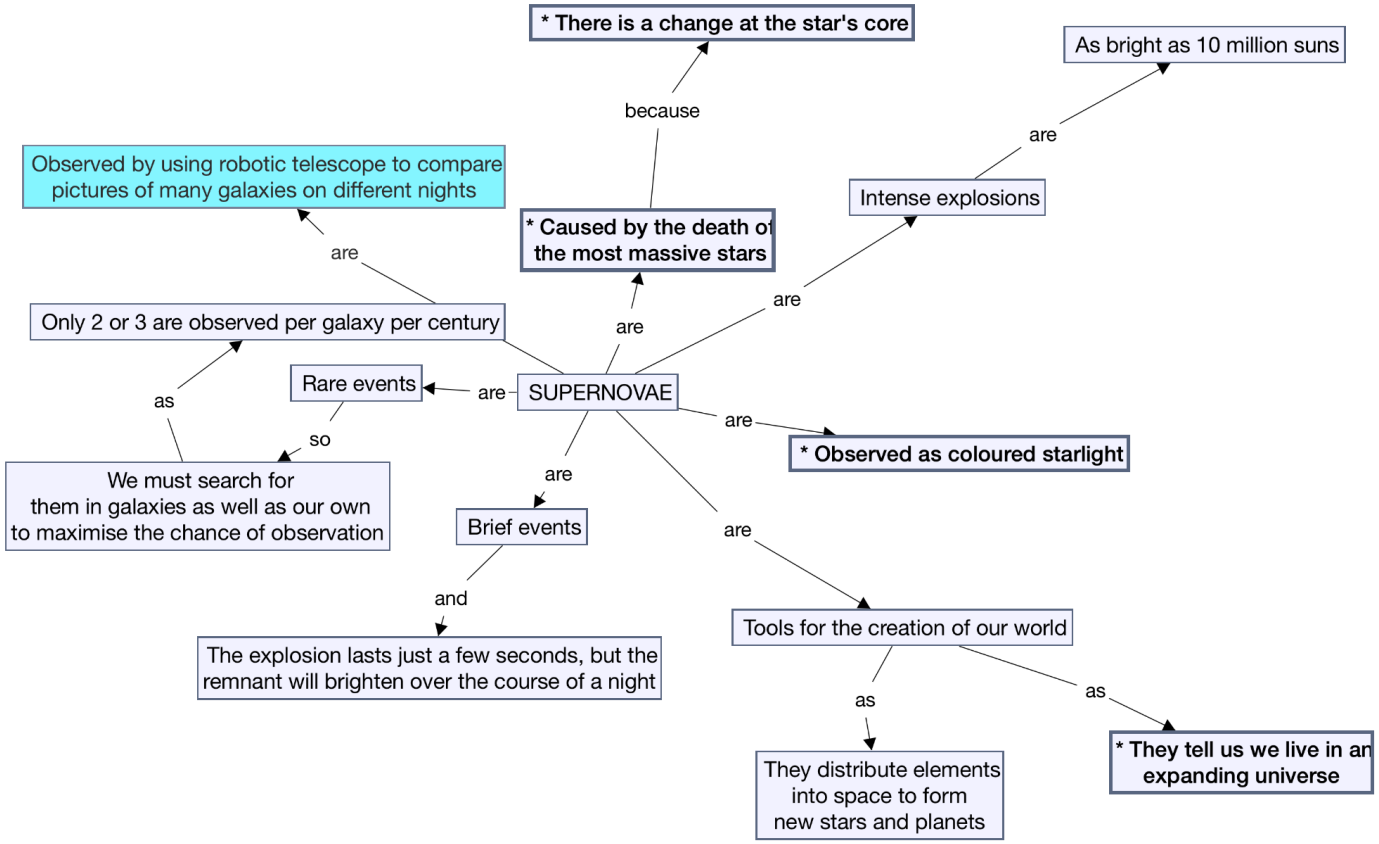
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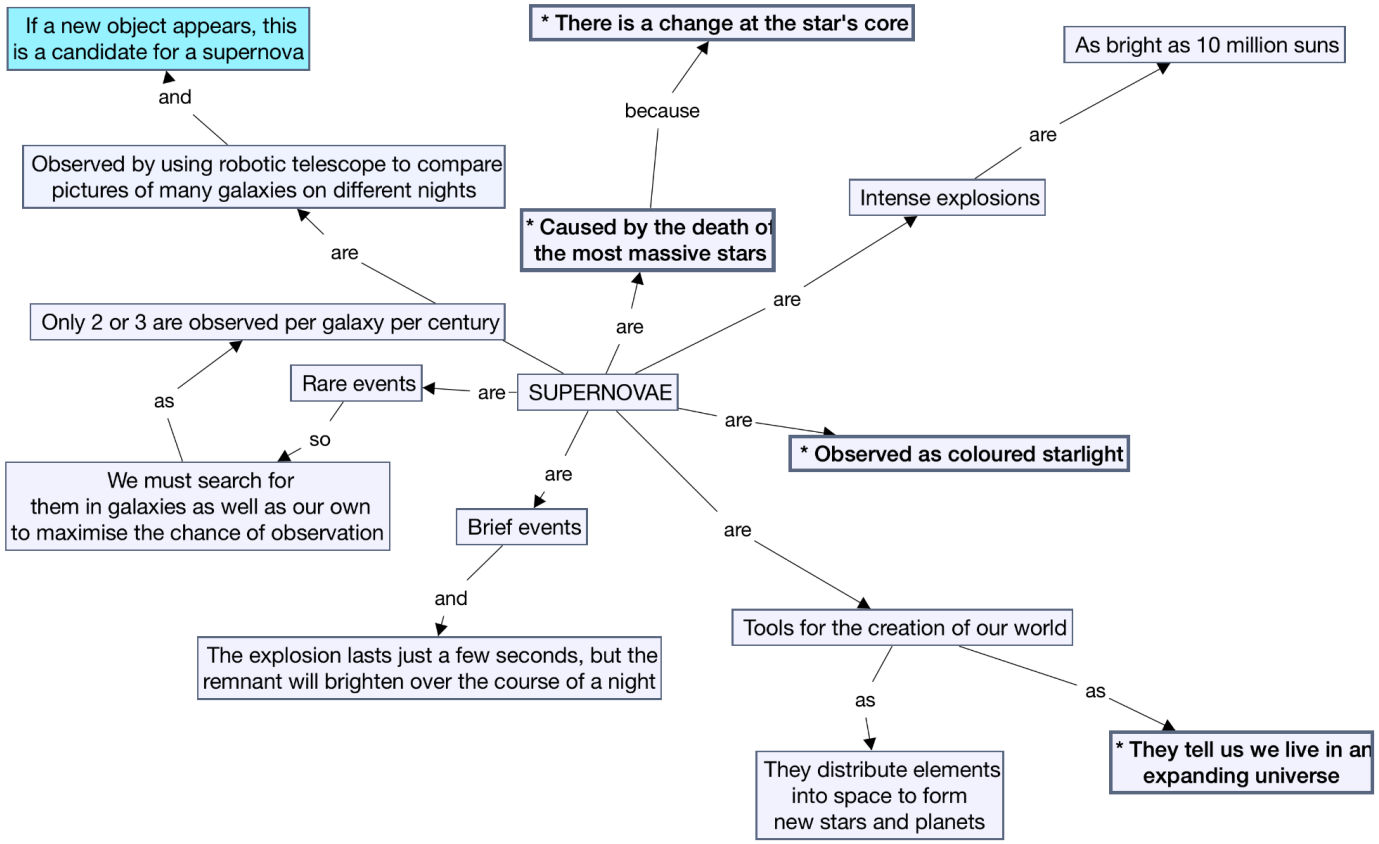
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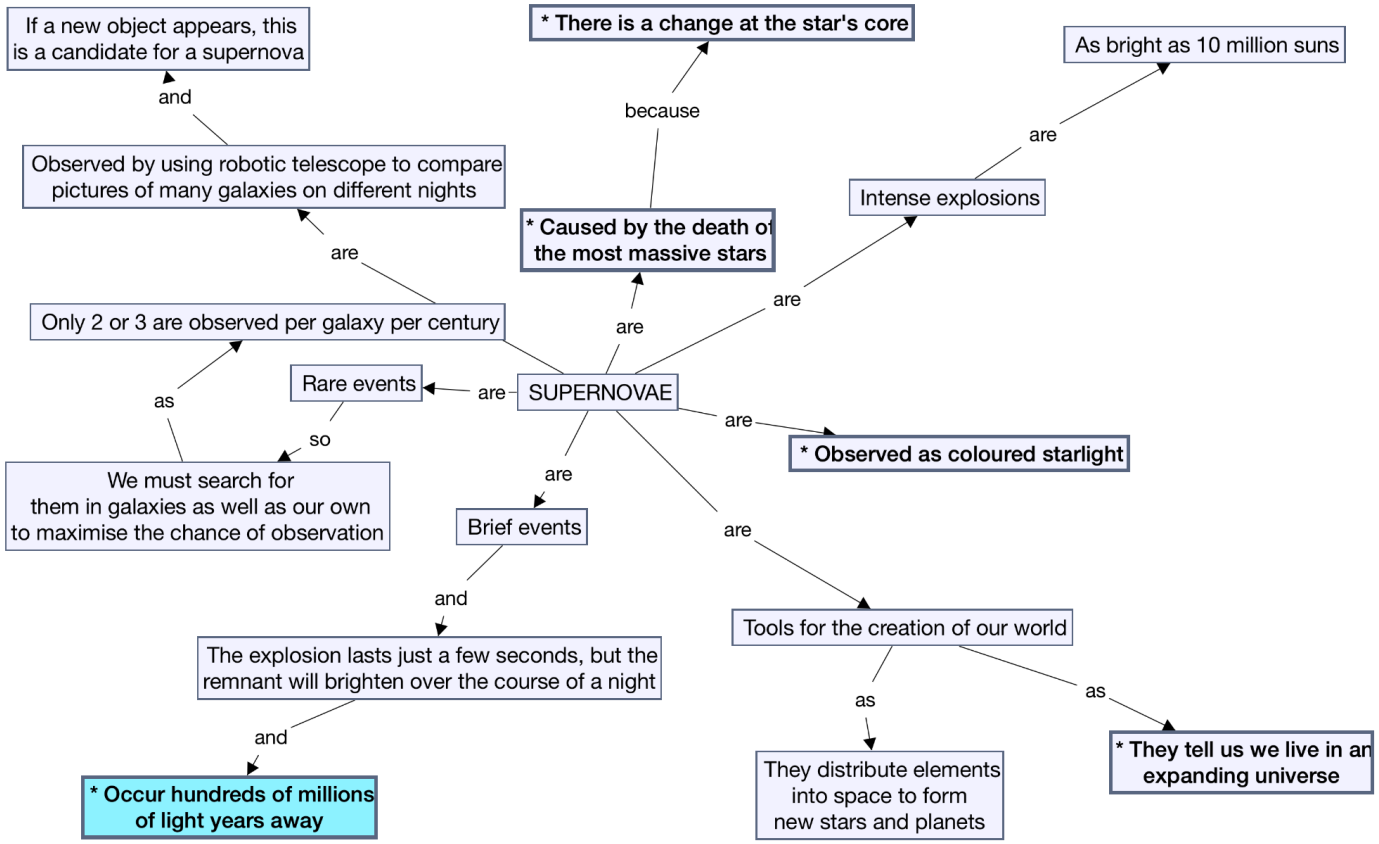
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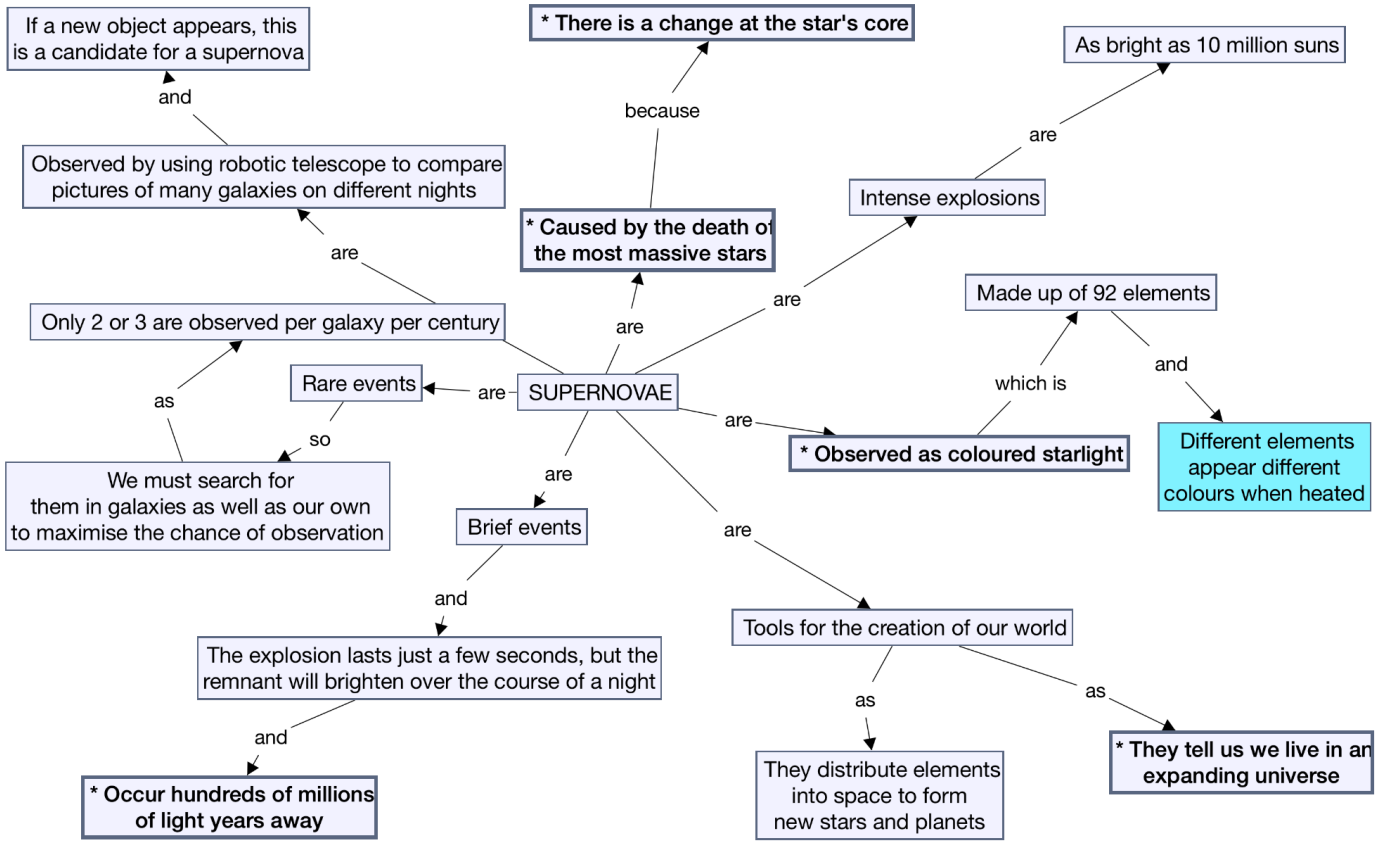
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Made up of 92 elements
and
Different elements appear different colours when heated
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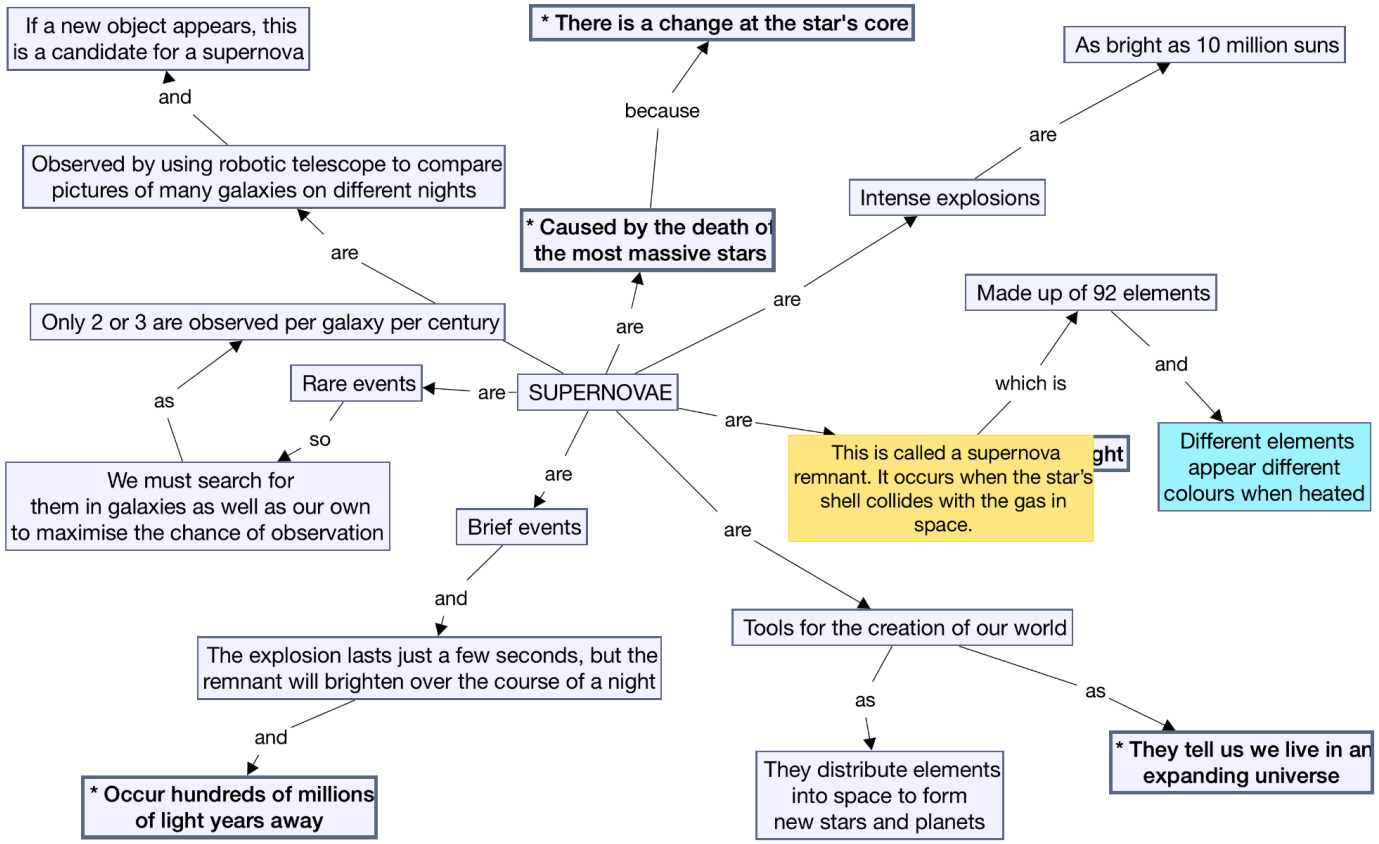
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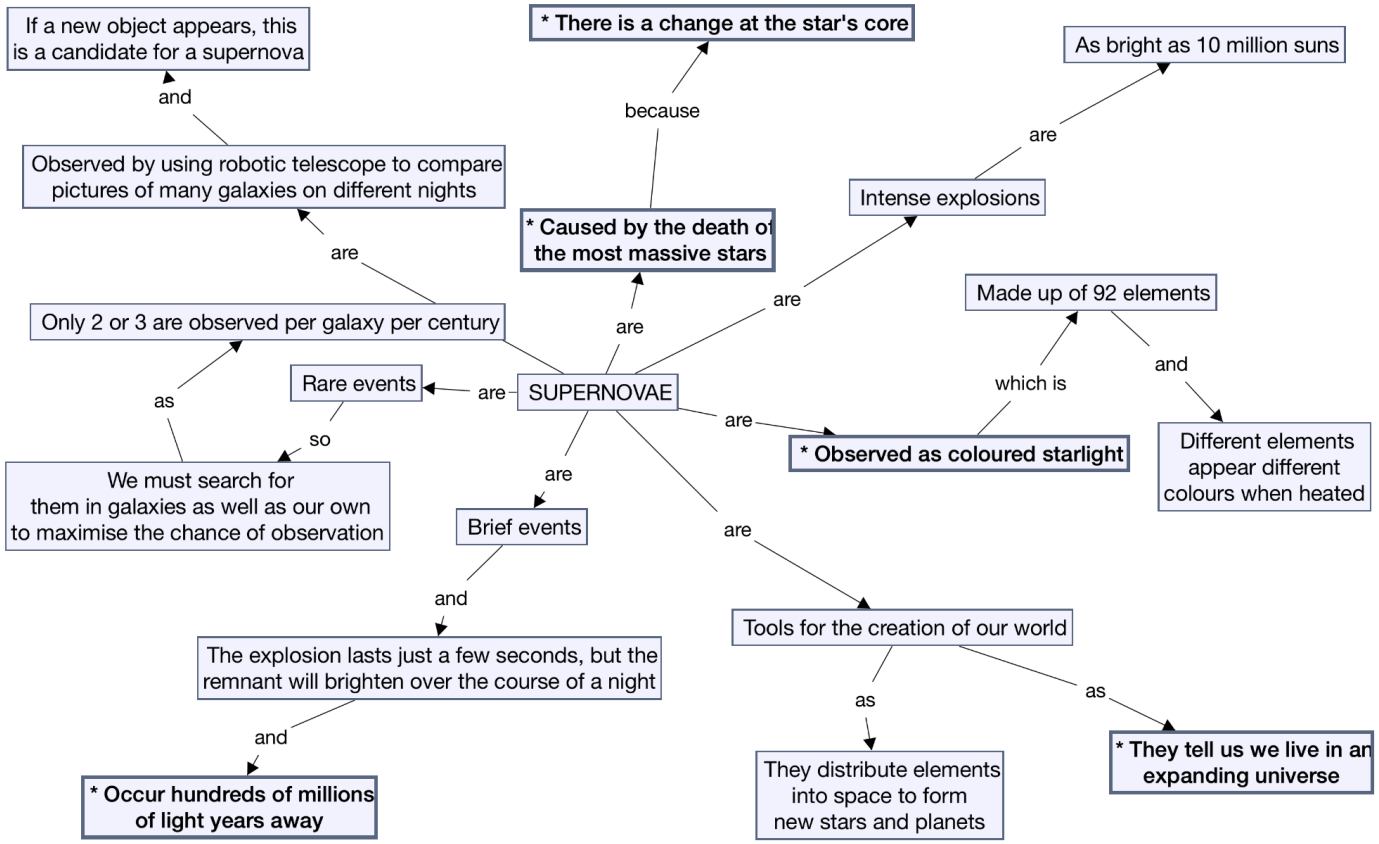
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representational functions

the primary functions of second screens as representations in augmenting TV programme understanding and engagement:

- Synchronized & coordinated
  - … time-based pairing of content
  - content that is designed for a managed focus of attention
- Persistent & accumulating
  - … a persisting view of the programme content, extending with the broadcast
  - augmenting recall of seen content, helping form connections
- Synoptic
  - … an abstraction of the ideas, facts and connections in the programme
  - paralleling the process of understanding
  - a means of categorizing, indexing and re-finding content viewed
- Interactive (navigable, interrogable, indexable)
  - … navigating and interrogating the seen programme content
  - for active learning and engaging the user
- Adaptable and adaptive
  - … personalised interaction responding to knowledge and interests
  - modifying automatically or just alternative pathways