IDEAS

① Skin cancer global ranking:

countries
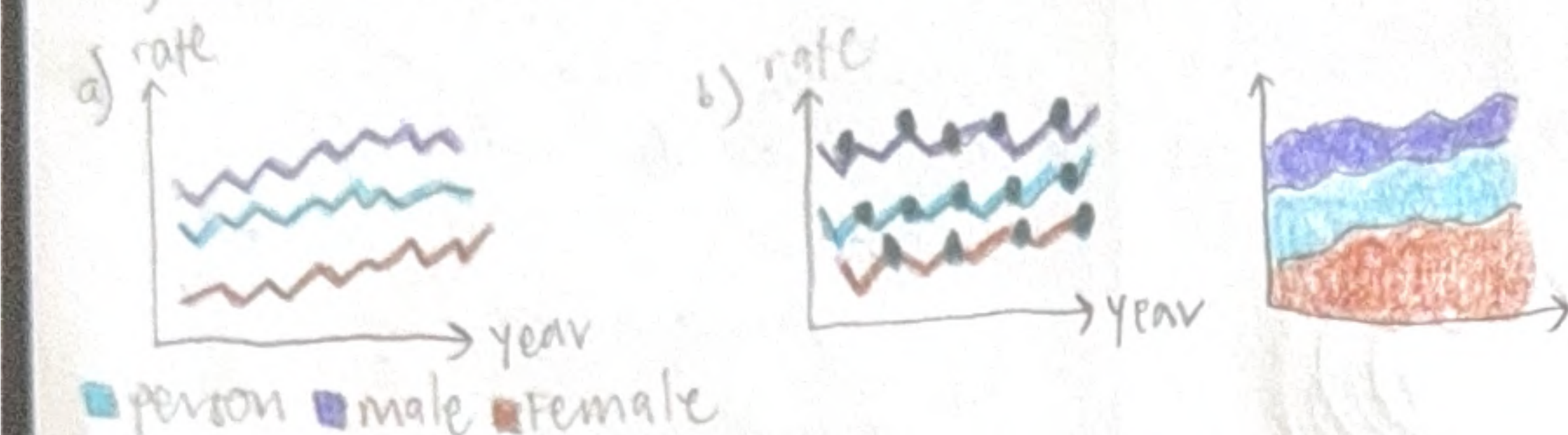a) →%.   b) x%:   c)
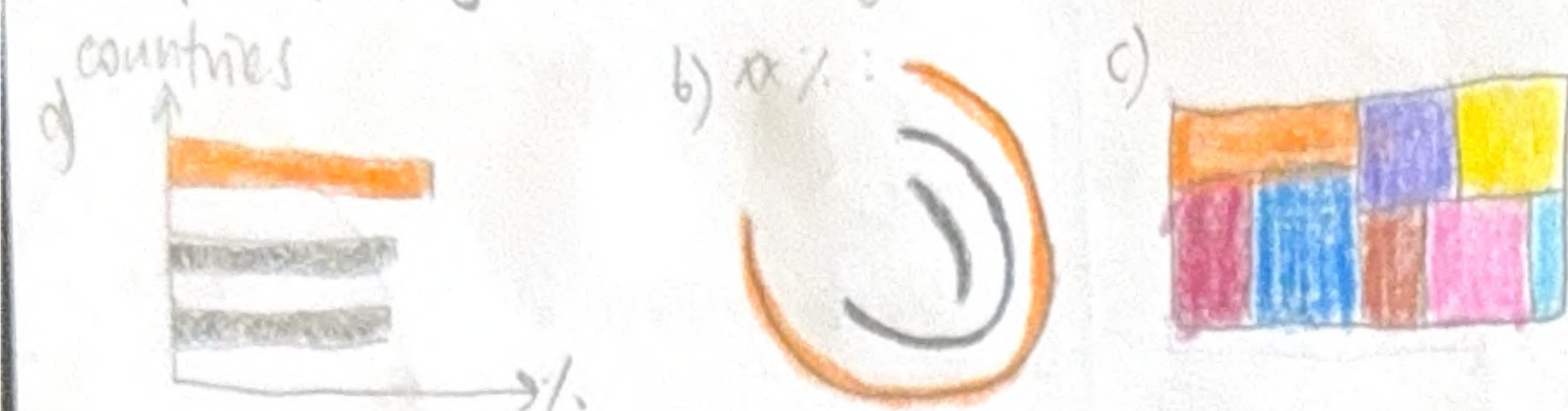
② Melanoma of skin stats:
i) No. of new cases

a) radial chart   b) no. of cases: c)
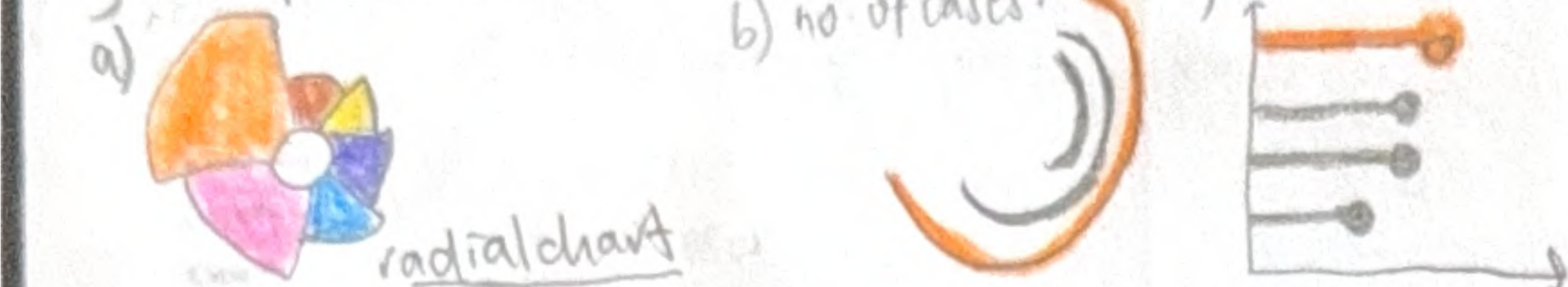
ii) rate of cases over the years / mortality rate

a) rate → year   b) rate → year

■ person ■ male ■ Female

③ cancer by state and territory: Incidence & mortality

a) Incidence mortality   year: ☐ sex: ☐   b) Incidence state mortality

rate ←   → rate   → rate

c) mortality   incidence   *each colour represents a state

④ UV Index

a)   b)

⑤ sun protection behaviours

a) used protection states →%   b) states →%   c)

FILTER

① Global ranking: keep ⓐ or ⓑ

a) →%.   — only highlight Australia, grey out the rest   b) ASR :)

② No. of new cases: keep ⓐ or ⓒ
c) cancer type → No. of new cases

a) 50 11 21 32 40   *site represents no. of cases

*length represents no. of new cases

ii) rate of cases over the years : keep ⓑ

b) rate → year

■ person
■ Male
■ Female

③ Incidence & mortality rate: keep ⓐ

Incidence   state   mortality   year: ☐ sex: ☐
 NSW VIC QLD
rate ←   → rate

Filter/dropbox interaction
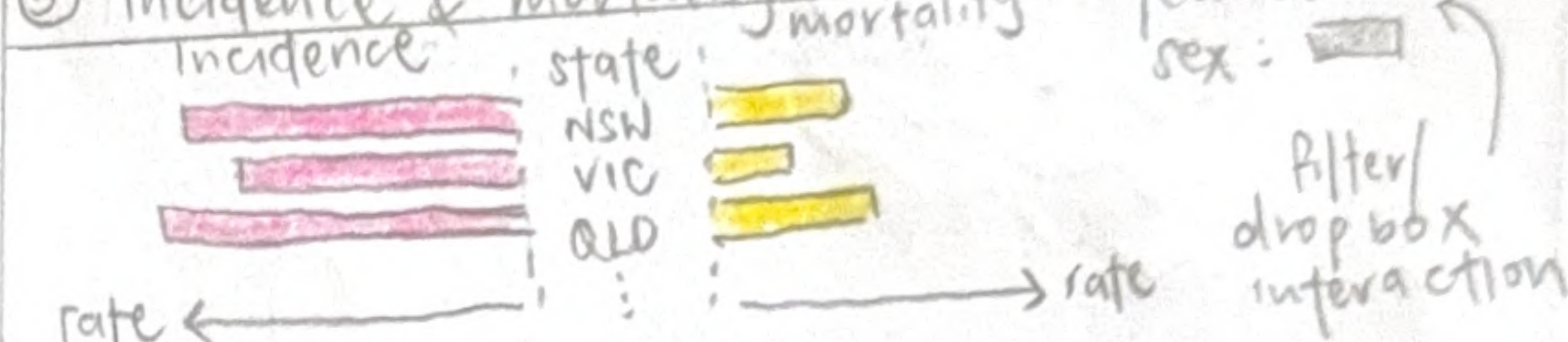
*length represents rate

④ UV Index by state: keep ⓐ

    month: ☐
 0 — 15 uv index   colour luminance or diverging

*Indicate state name
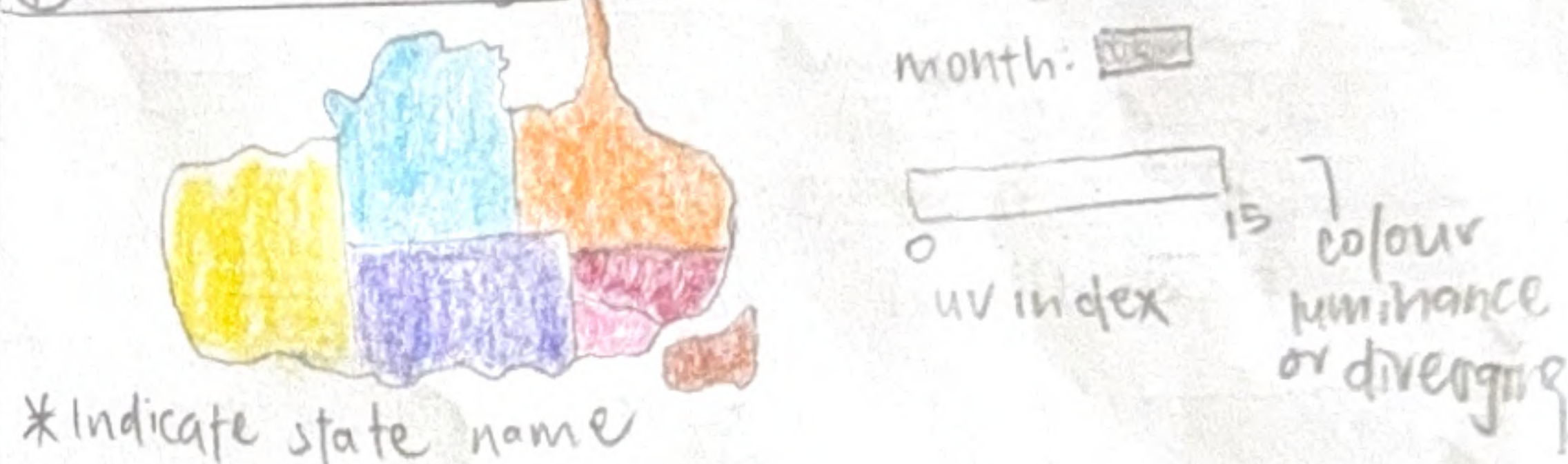
⑤ Sun protection behaviours: keep ⓐ and ⓑ

states →%.   states NSW VIC QLD →%.
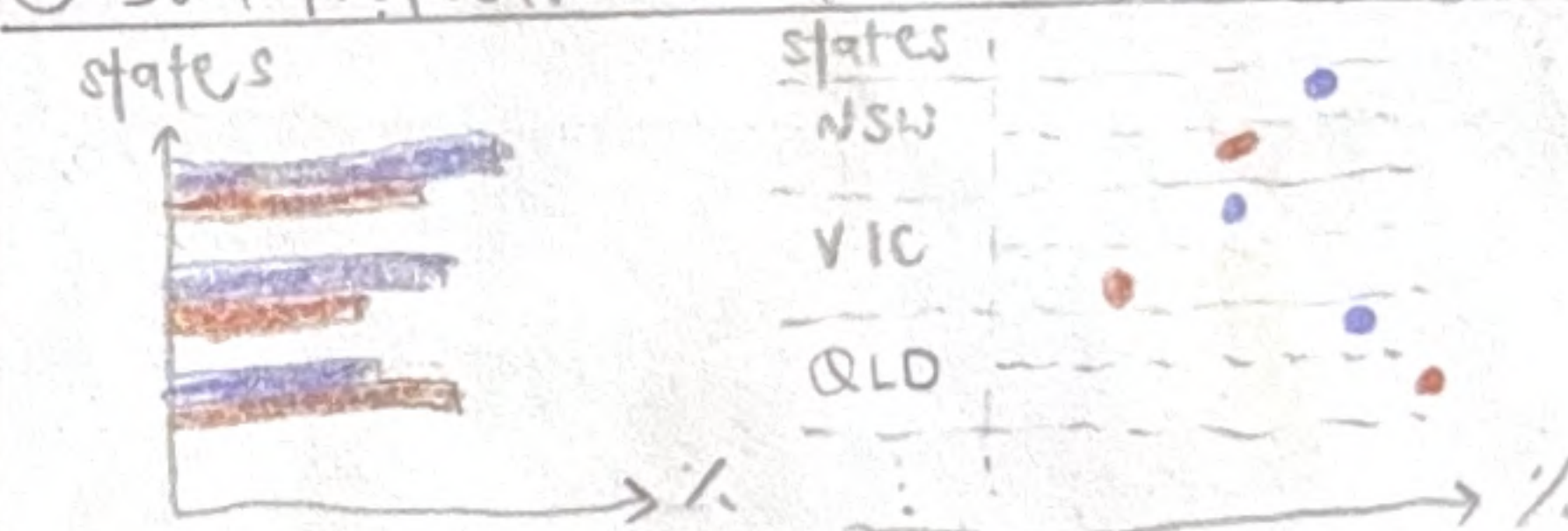
CATEGORIZE:

① Global ranking → ② rate over the years → ③ no. of new cases → ④ Incidence & mortality rate → ⑤ UV Index → ⑥ Sun protection behaviour

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COMBINE & REFINE:

For ①, we can start with an overview of the global ranking and use colours to highlight how prominent skin cancer is in Australia.
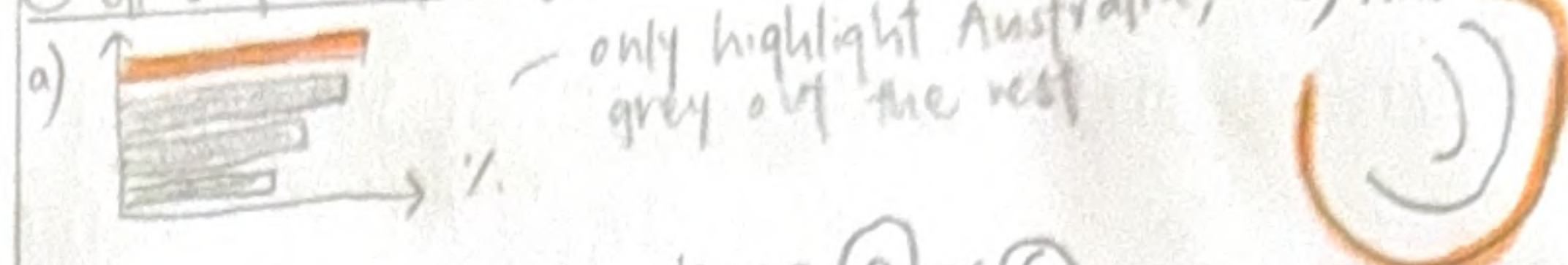
For ②, instead of using a bar chart, another similar idiom can be used, lollipop chart. This helps to highlight the number of new cases.

For ②ii), a line graph together with a dot plot can be combined to show the rates each year in a clear way.
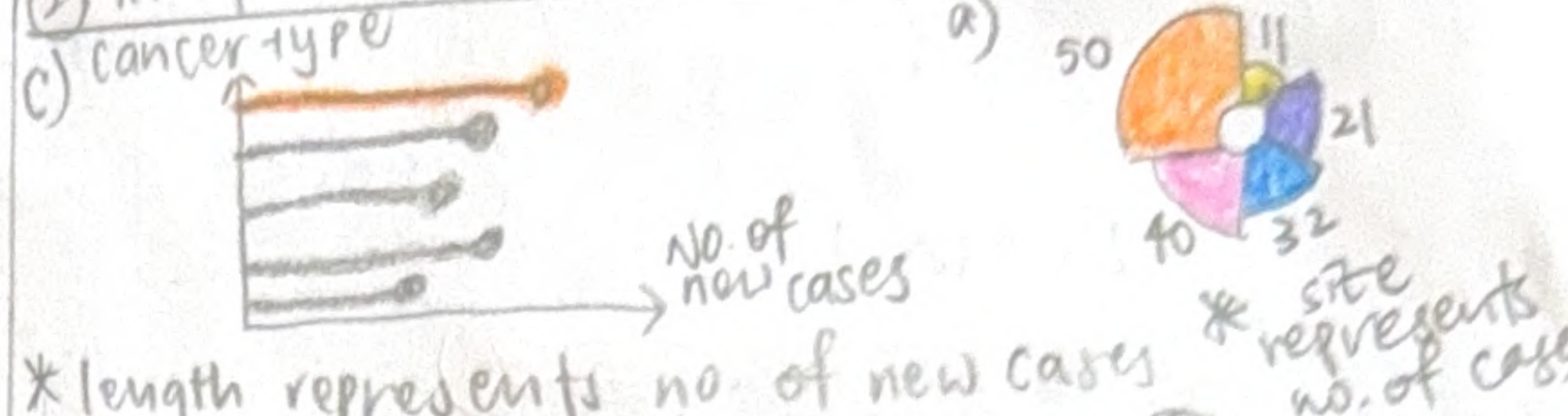
For ③, instead of doing another line graph for matality rate, it can be combine with Incidence rate in a mirror chart. Interactive tabs added for ③ and ④ to be included.
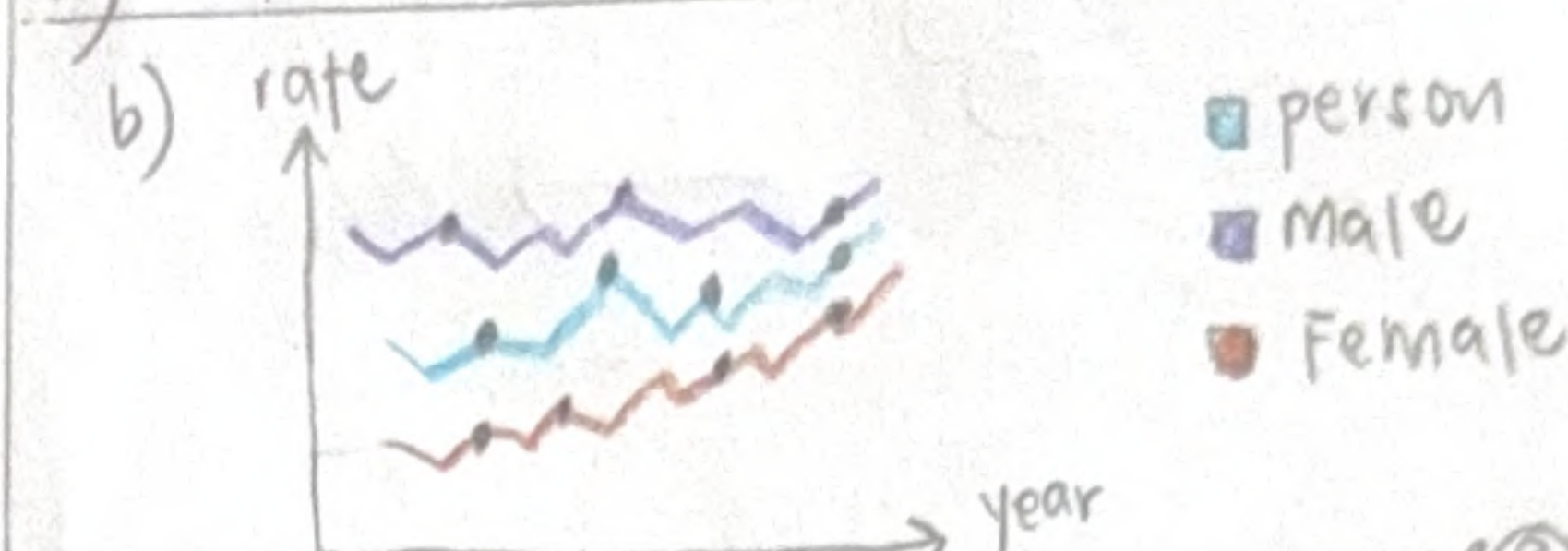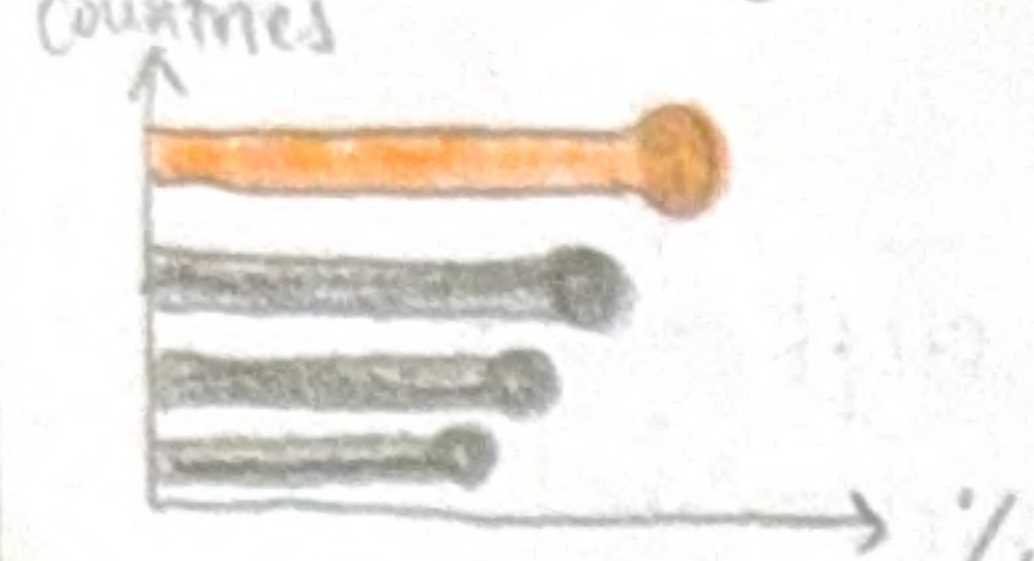

QUESTION:

- Is there too many bar charts?
- Does the story flow nicely?
- Is it too difficult to do a toggle/ interactive geographical chart
  ↳ should you take an average of the data instead?
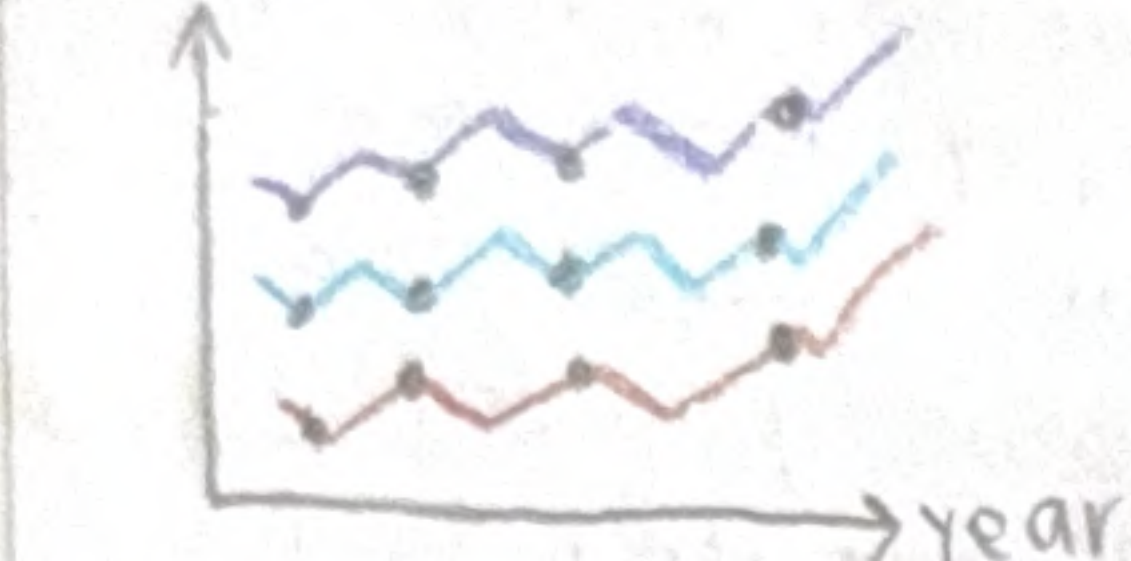- What part of sun protection behaviour should I focus on?

LAYOUT:

Beneath the Harsh Sun: Australia's Melanoma Crisis

① Global ranking
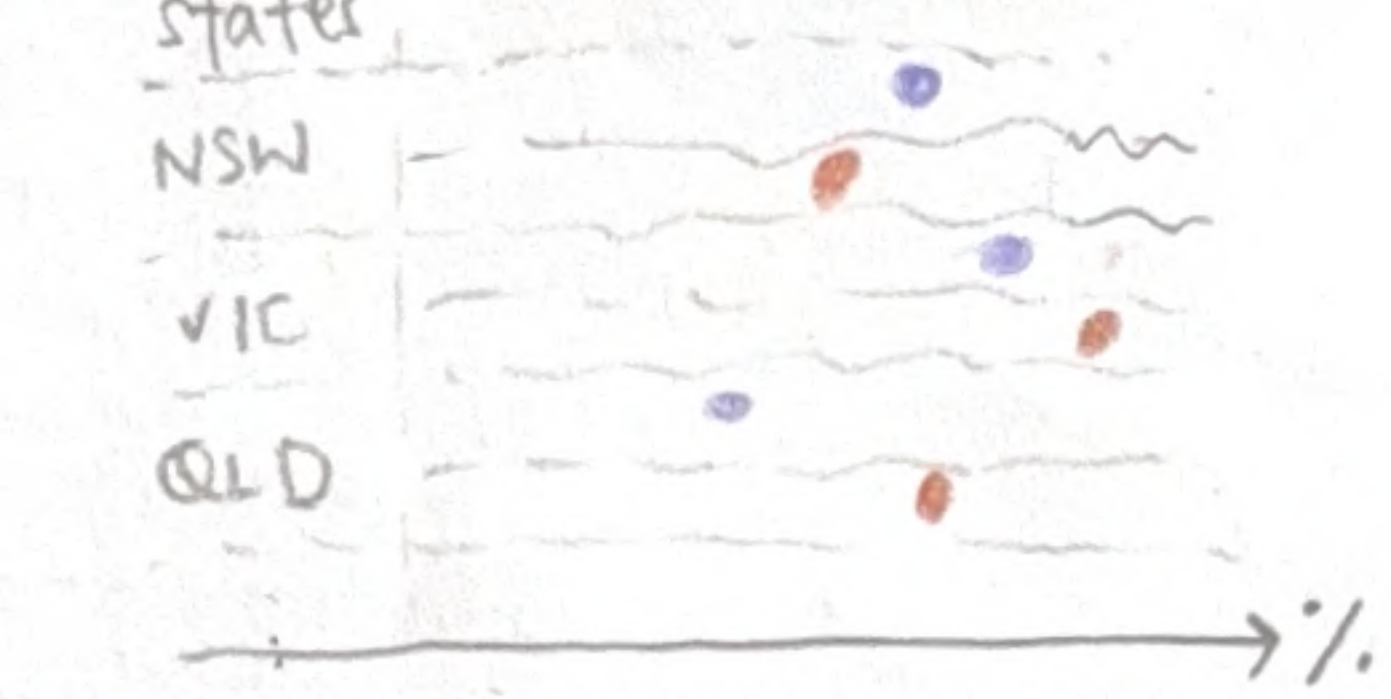countries

%

② rate

year

②ii)

50
5
11
21
40
32

③ Incidence | state | mortality

NSW
VIC
QLD
WA
:

rate

year: ☐
sex: ☐

rate

month: ☐

0 ————— 15

④

⑤

states
NSW
VIC
QLD

%

OPERATION:

click
click

Year: ☐ click
• 2010
• 2011
• 2012
• 2013

• 2024

Sex: ☐ click
• Female
• Male

month: ☐ click
• Jan
:
• Dec

* chart data
changes as
year, month
or sex changes

For ①, ②ii), hoving over each
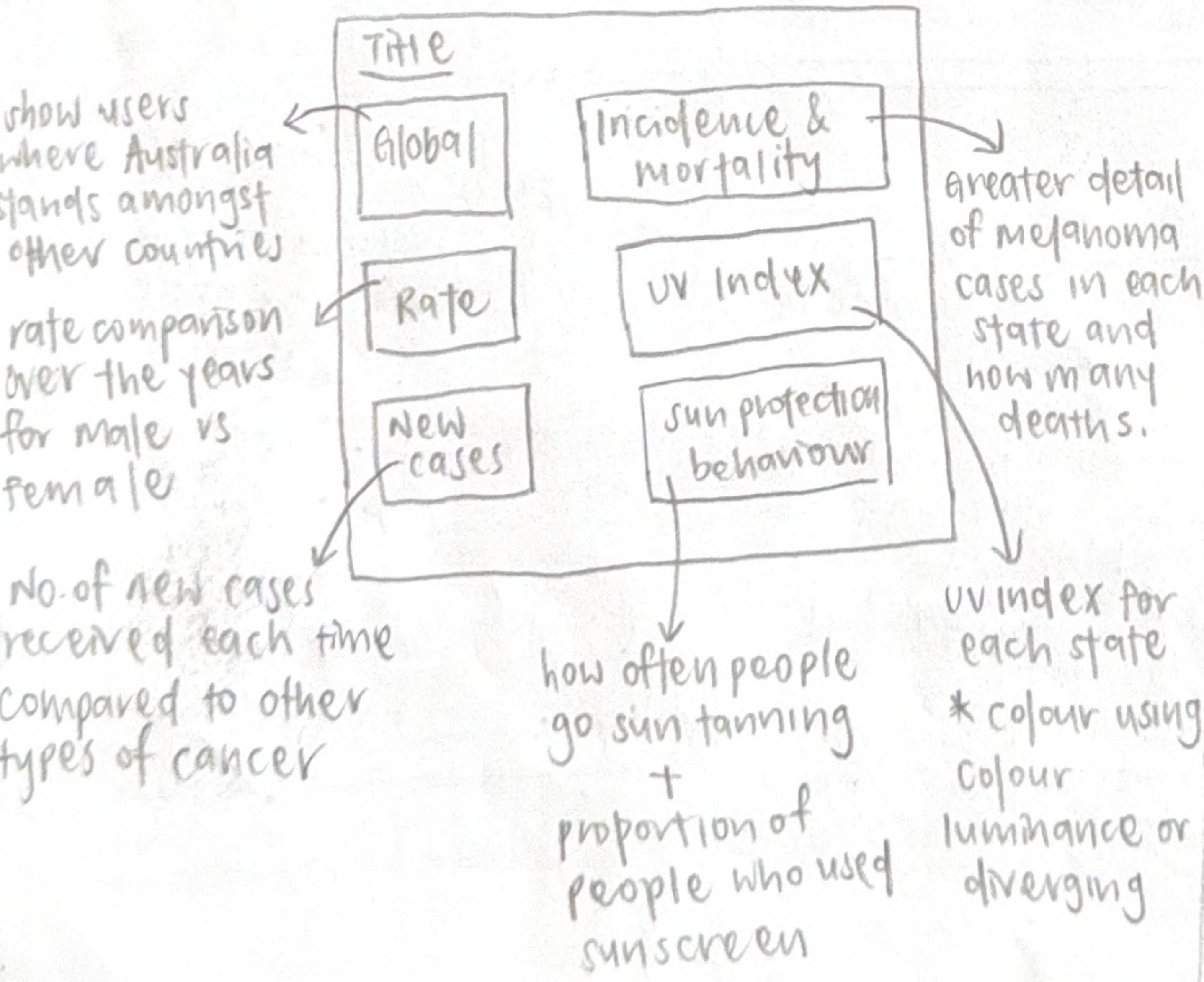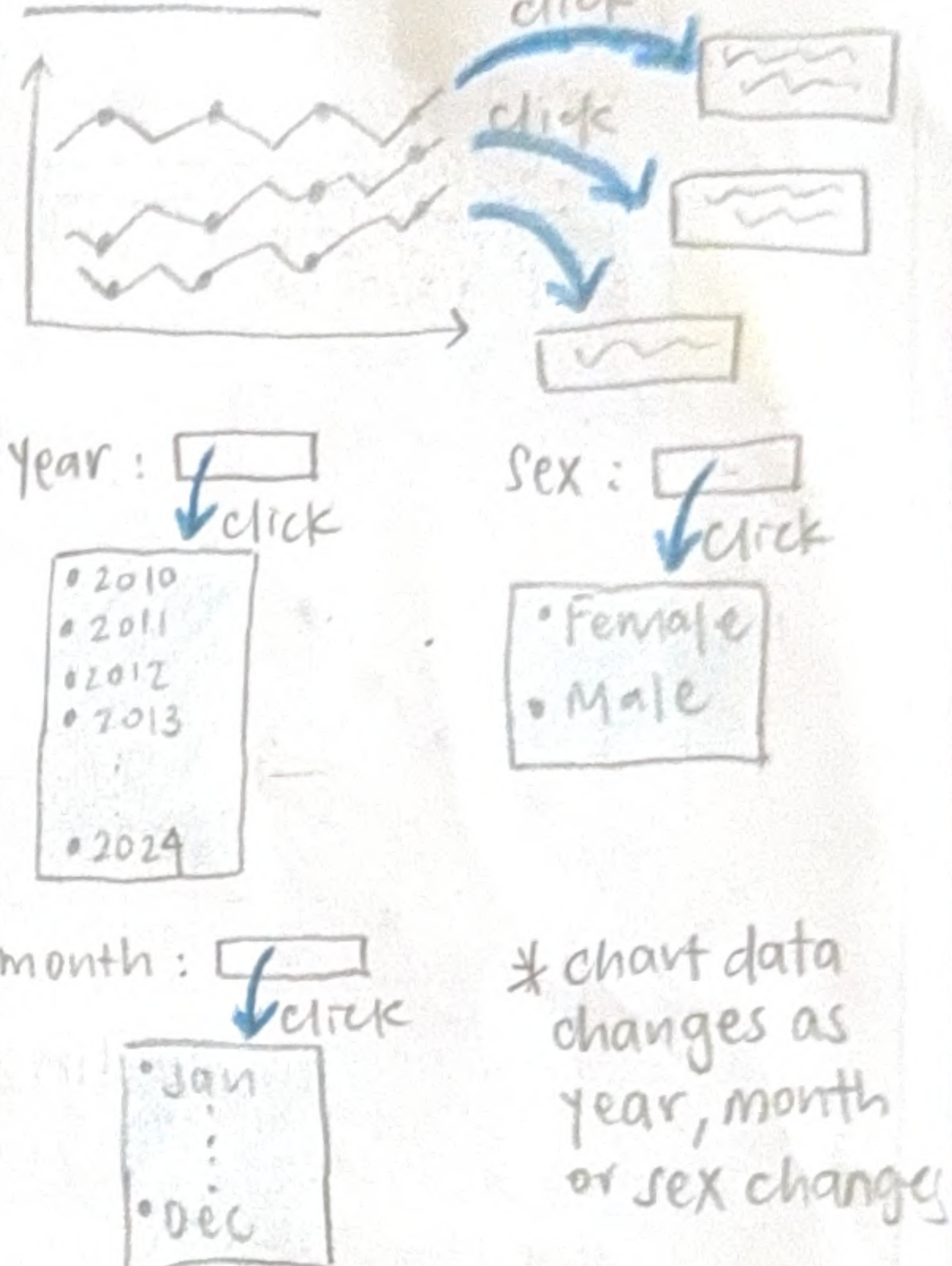bar will expand to show the
statistics.

FOCUS:

- For a dashboard landscape view, everything is important
- All charts have equal focus in this layout
- some charts may take up more space / require more space due to data being more complex or longer words.

Dashboard arrangement

show users
where Australia
stands amongst
other countries

rate comparison
over the years
for male vs
female

No. of new cases
received each time
compared to other
types of cancer

TITLE

Global

Rate

New
cases

Incidence &
mortality

UV Index

Sun protection
behaviour

Greater detail
of melanoma
cases in each
state and
how many
deaths.

how often people
go sun tanning
+
proportion of
people who used
sunscreen

uv index for
each state
* colour using
colour
luminance or
diverging

Discussion:

Disadvantages:
* Too much charts on one page
* No space for extra background
info to elaborate the charts
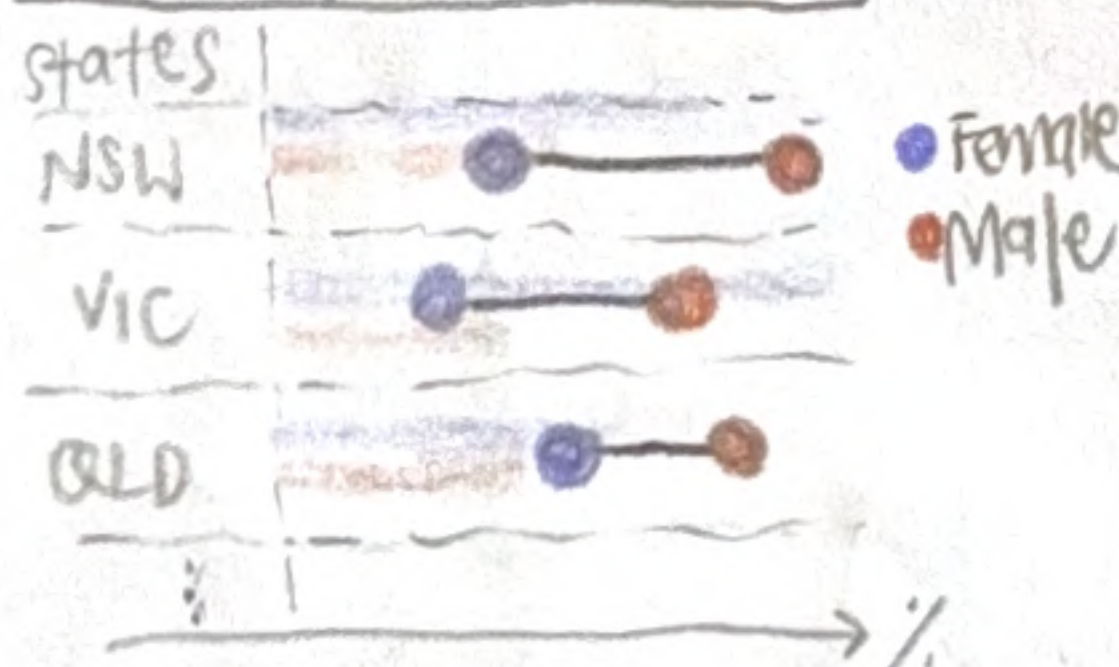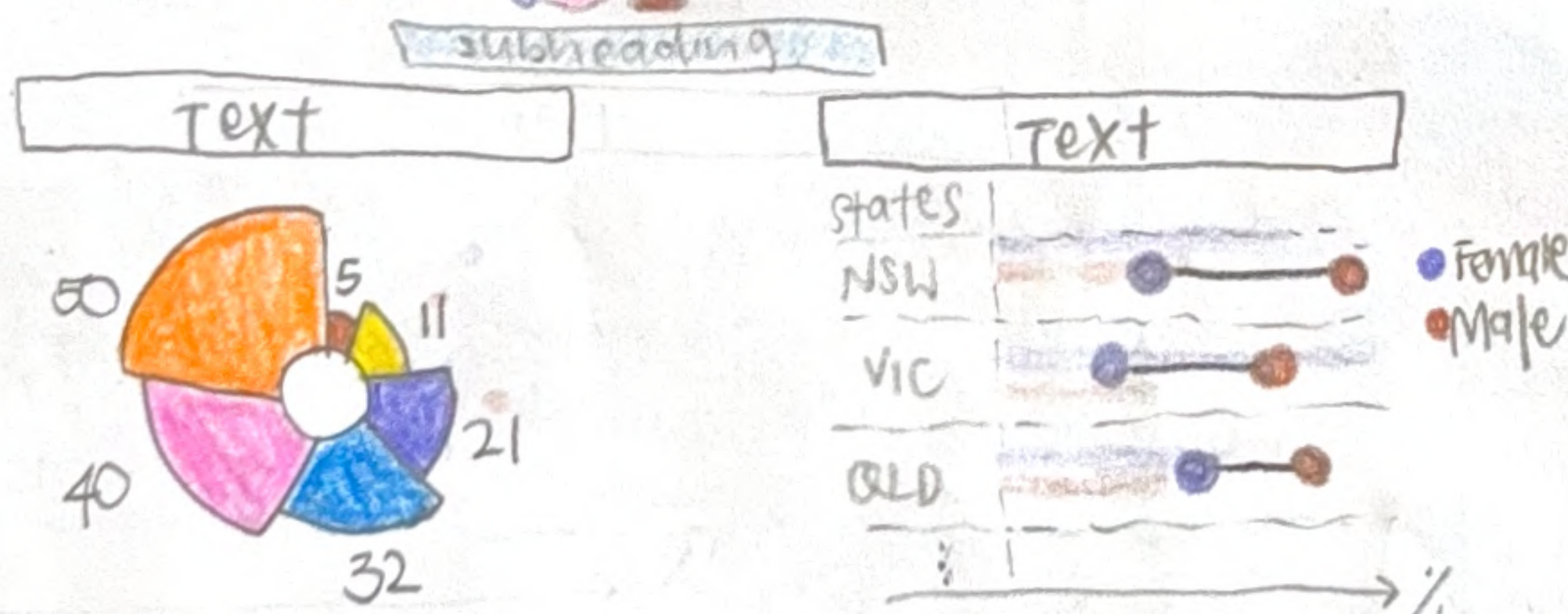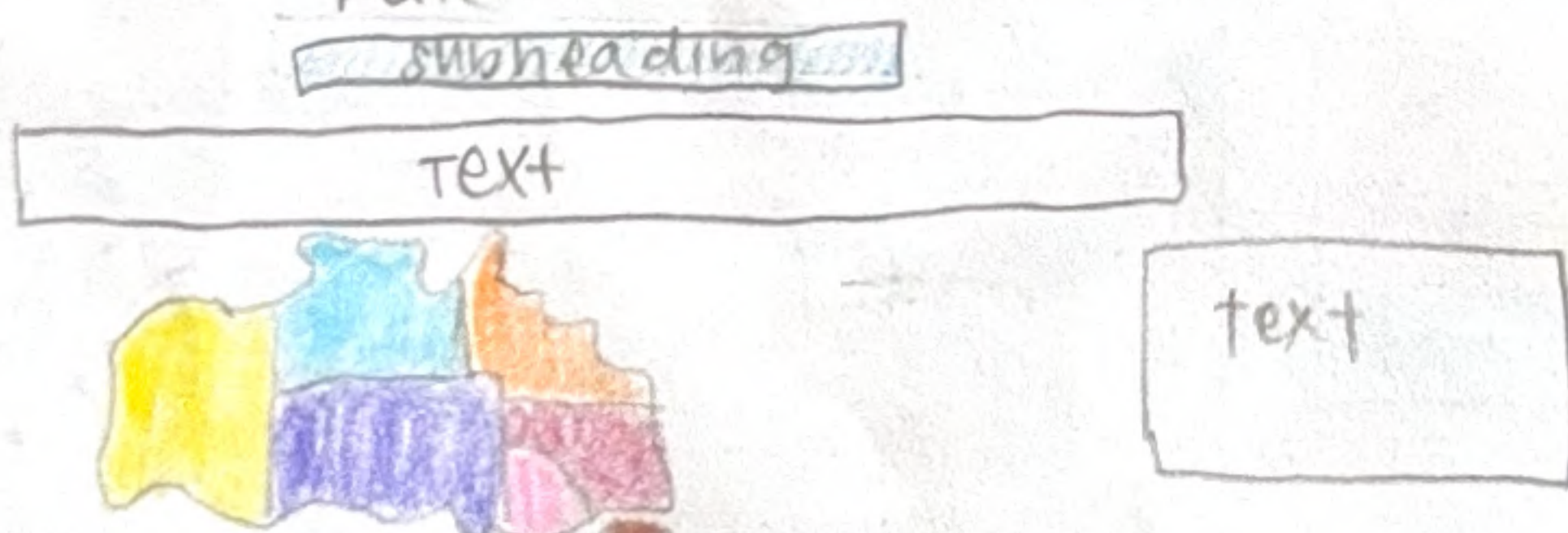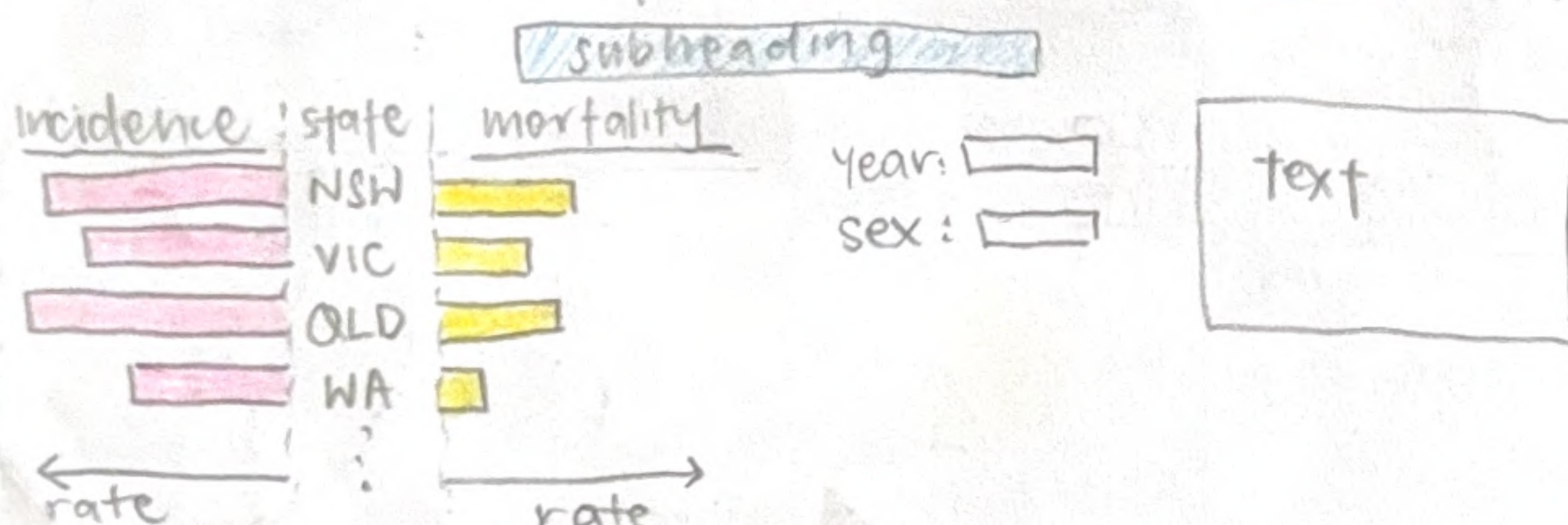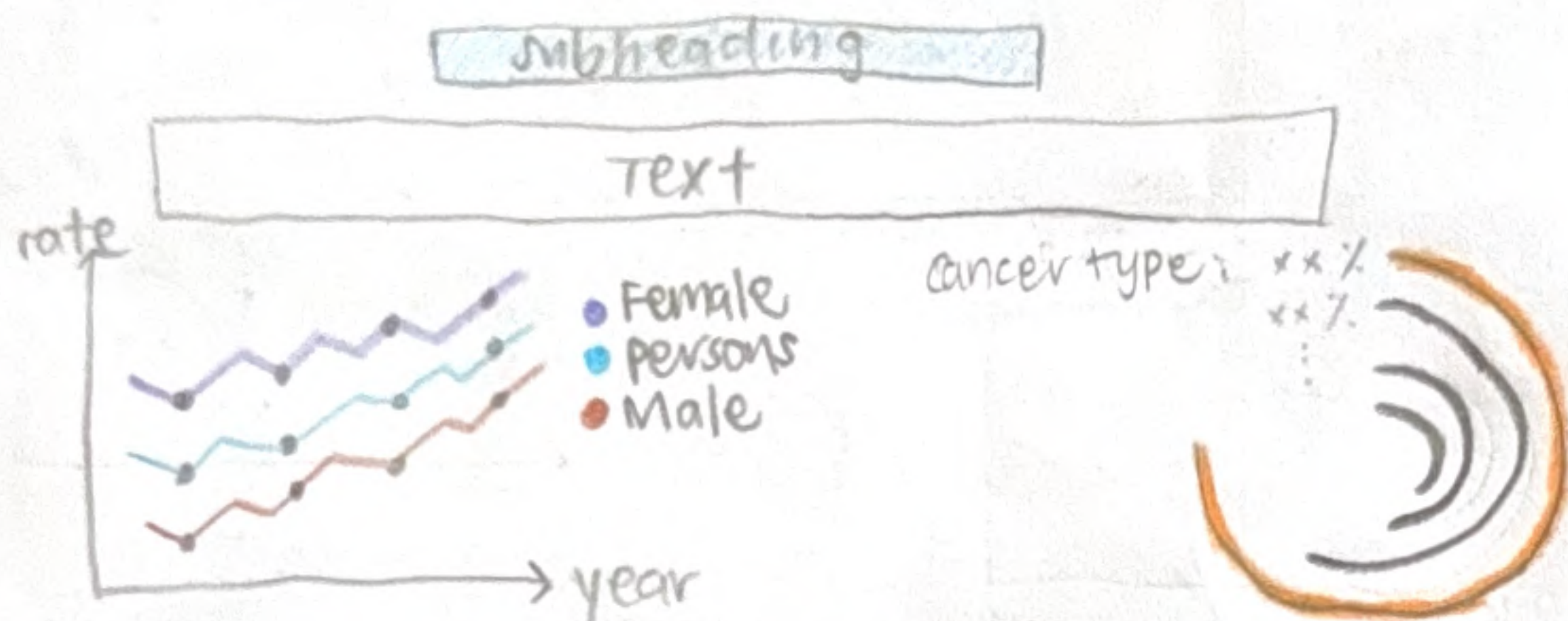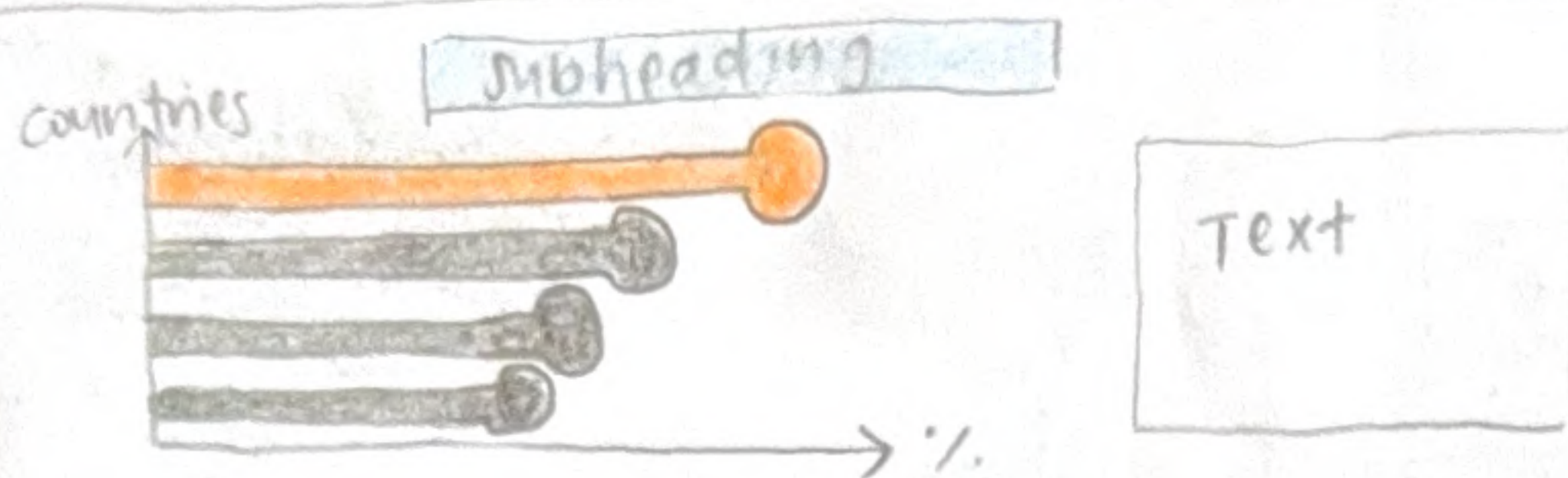* No storyline
* No main focus, too many
things at once.

Advantages:
* well segmented sections
* Easy for users to operate
* Easy to switch out graphs/
add graphs without destroying
the layout

LAYOUT:

When the sun becomes an enemy:
Skin cancer in Australia

Text / Background Information

countries — Subheading

Text

subheading

rate
- Female
- persons
- Male

→ year

Cancer type: ××%
××%
...

subheading

incidence | state | mortality

| NSW |
| VIC |
| QLD |
| WA |
| : |

← rate → rate

Year: ☐
sex: ☐

text

subheading

Text

text

subheading

Text   Text

states
NSW
VIC
QLD
:

- Female
- Male

→ %

50 5 11
     21
40 32

DISCUSSION:

Advantages:
- Error bars on chart
- A range of different types of charts
- year dragging bar seems different
- Good storyline   • Animation └ capture audience

Disadvantages:
- radial chart is interesting but too complex?
- Filter/toggle function too difficult to implement?

Title: Narrative layout
Author: Carissa Chua
Date: 19 Sept 2025
sheets: 3
Task: Narrative visualisation

OPERATIONS:

- Can toggle / filter between year, sex
- The line graph will be an animation and will show the data from 1980 to 2020

- colour plays a vital part to highlight melanoma
- Type of filters:
  └ drop down
  └ multiple select
  └ single select
  └ year: select or drag?

FOCUS:

5 focus
- Global rate / prevalance
- rate / prevalance
- incidence / mortality
- w Index

sun protection / tanning behaviour

bar charts: length depends on %, no. of cases

length of radial chart

→ Error / confidence interval bar needed?

→ light / faded grids to make it clearer

→ make sure colours are colour blind friendly

→ luminance / diverging colour to represent UV index

→ male vs female standardise the colour throughout
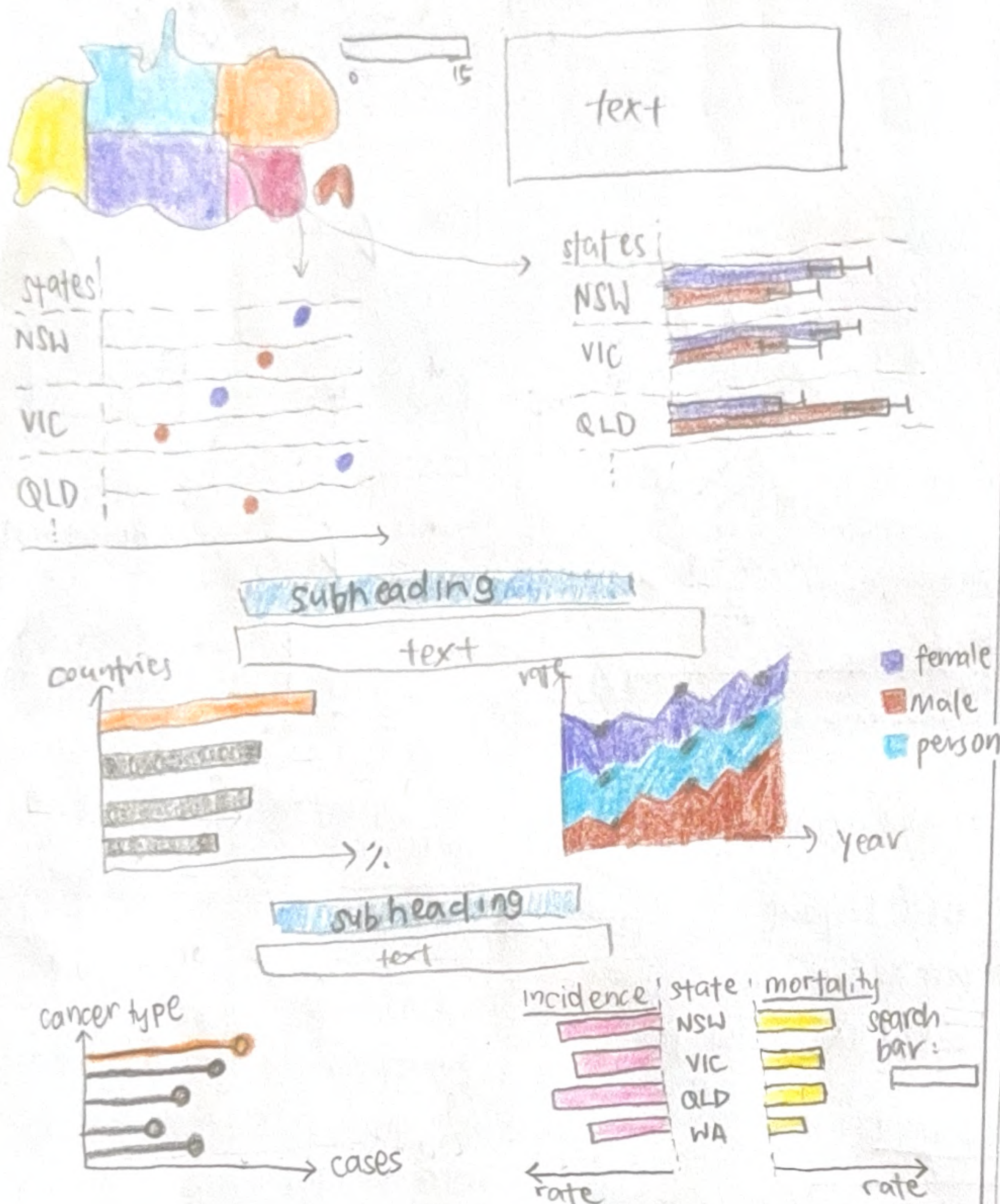
→ colour by state?

LAYOUT

SLIP, SLAP, SLOP, STILL?
`Image`
Tracking Skin Cancer in Australia

ABS: " xx% of Australians like sun tanning and out of which xx% put sunscreen. By comparing UV Index of different states, we can observe different outcomes —"

`text`

states
NSW
VIC
QLD

subheading
`text`

countries

→ %

rate

- female
- male
- person

→ year

subheading
`text`

cancer type

→ cases

incidence | state | mortality
NSW
VIC
QLD
WA

→ rate   search bar: → rate

OPERATIONS:

* As users click the geographical chart by state, the scatter plot and horizontal bar charts will change / grey out the rest.

* search bar so users have more flexibility in entering the year that they want

* tooltips added to all charts so users can hover above it and see the stats.

click
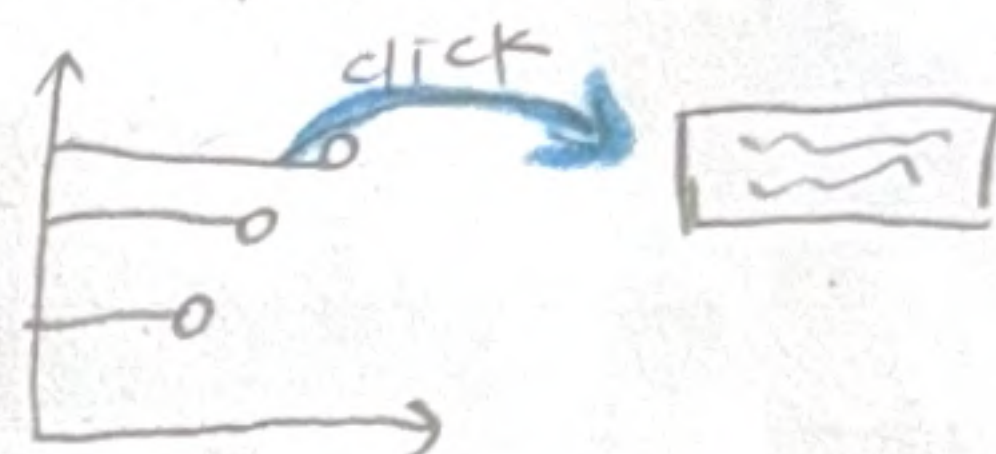
FOCUS:

① Main focus is on Australian's sun tanning behaviour and how often they use sunscreen in each state.

② Then we show the overview/ bigger picture (g globally and rate of melanoma in Australia)

③ Then the incidence & mortality rates.
  └ compare between different states
  └ where melanoma stands in terms of how many new cases there are in a year.

→ geographical graph is key
→ broader overview
→ detail overview by state.

* 3 subheadings/focuses

DISCUSSION:

Advantages:
- more user interaction
- gives a storyline starting from a more personal/ relatable perspective
- clear at a glance (layout)
- storyline can help educate Australians
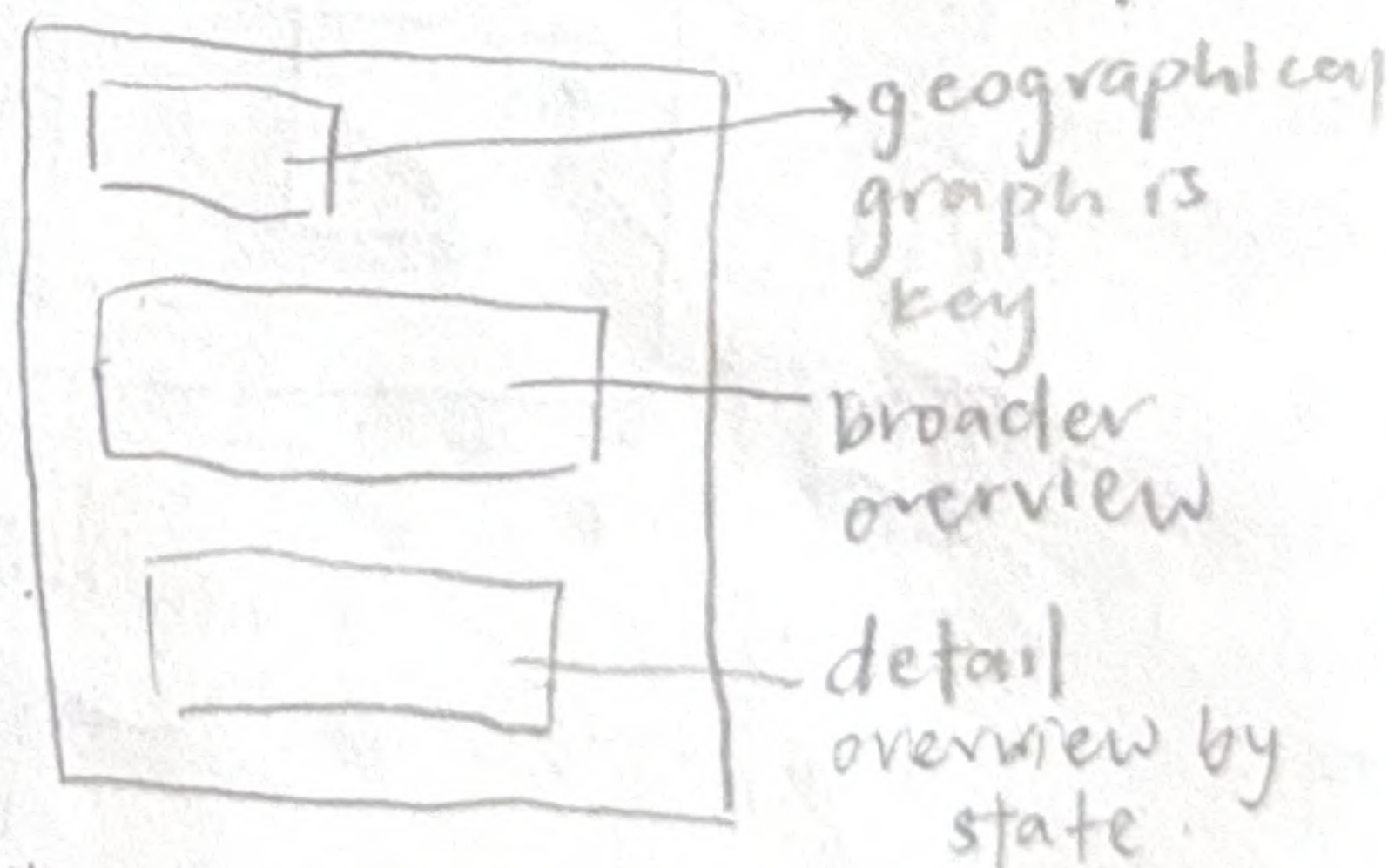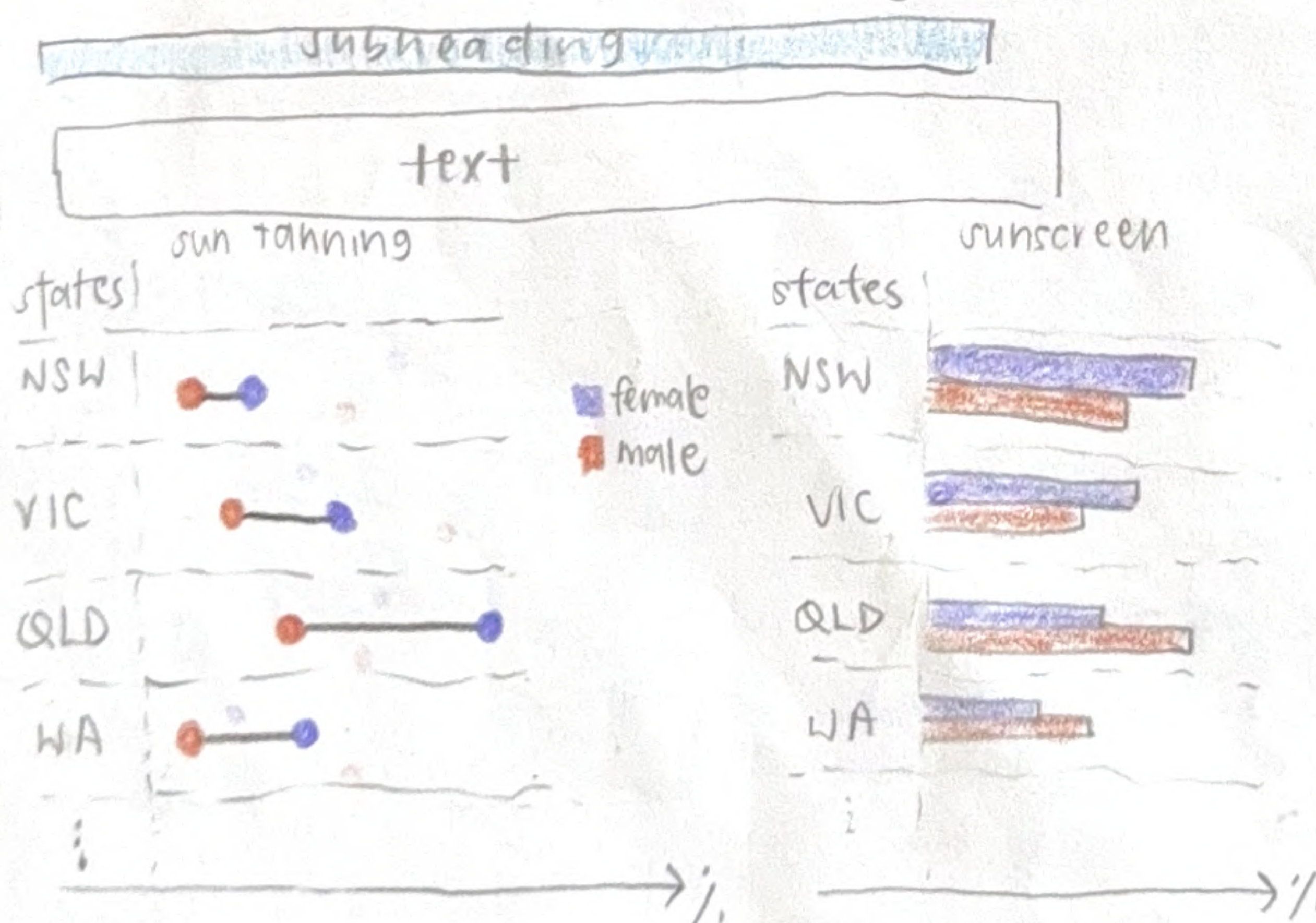- layout is not too long so users will not get tired of scrolling

Disadvantages:
- search bar feasible to implement?
- geographical chart linking to scatter and bar chart when users click — is it feasible?
- is it too crowded at the top?
- search bar for year and drop down for sex is it too much going on?

LAYOUT:

SLIP, SLAP, SLOP, STILL?
Tracking Skin Cancer in Australia
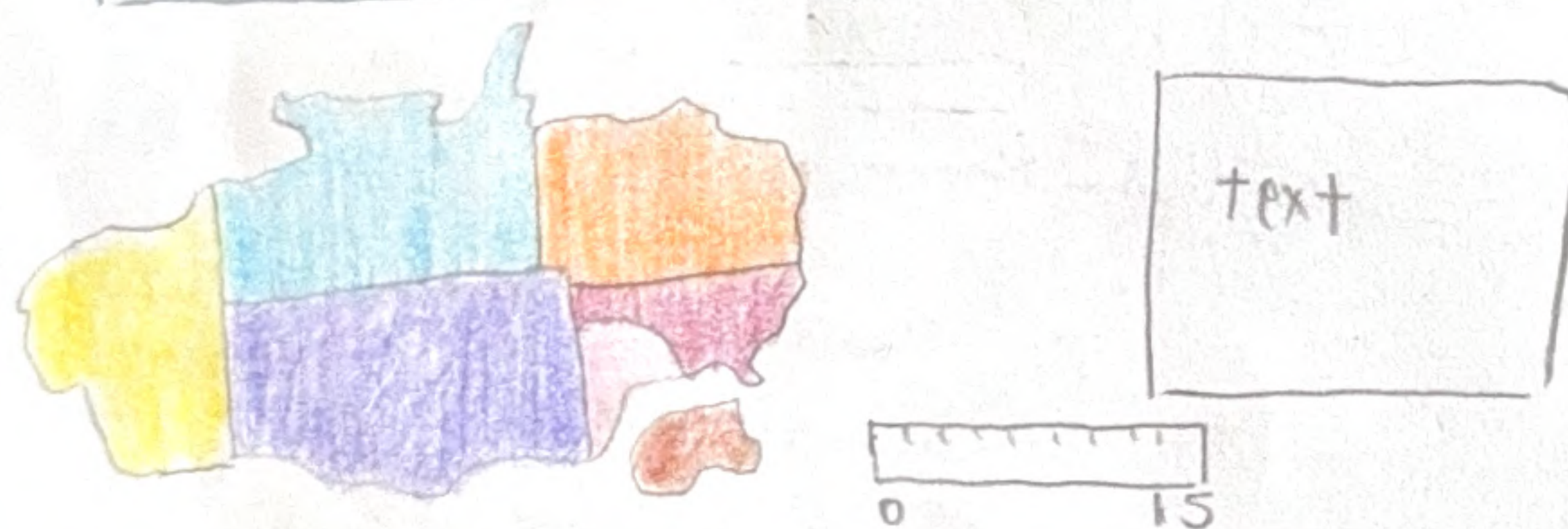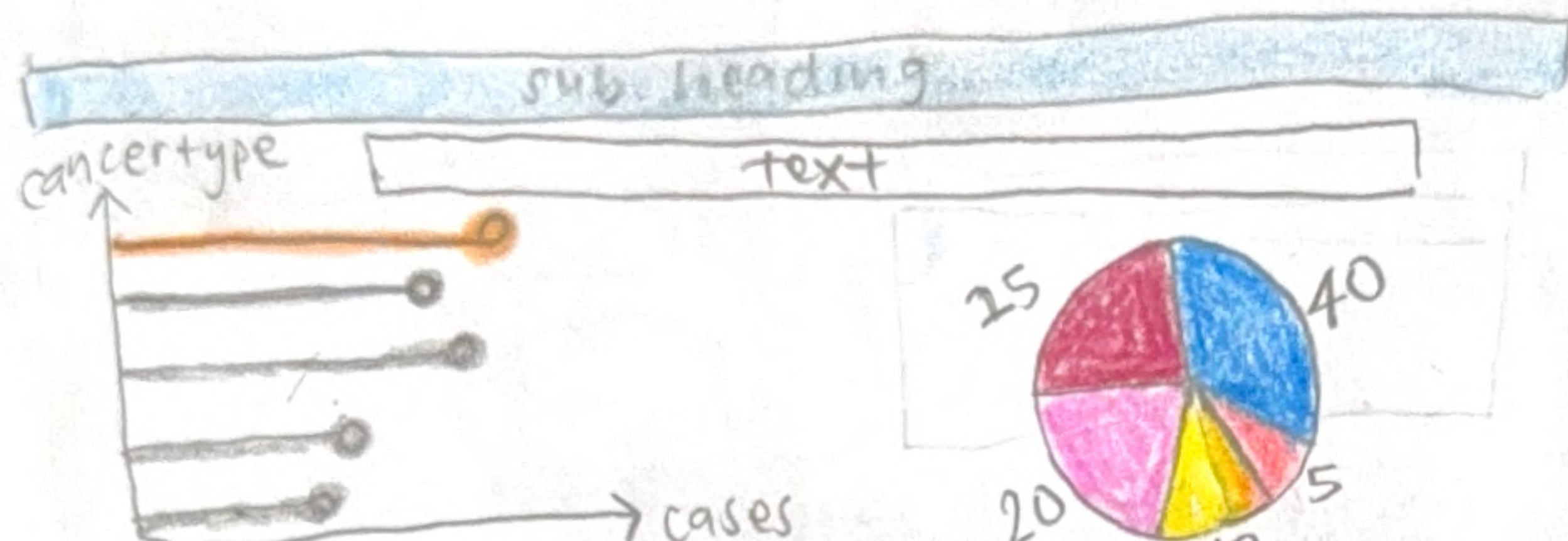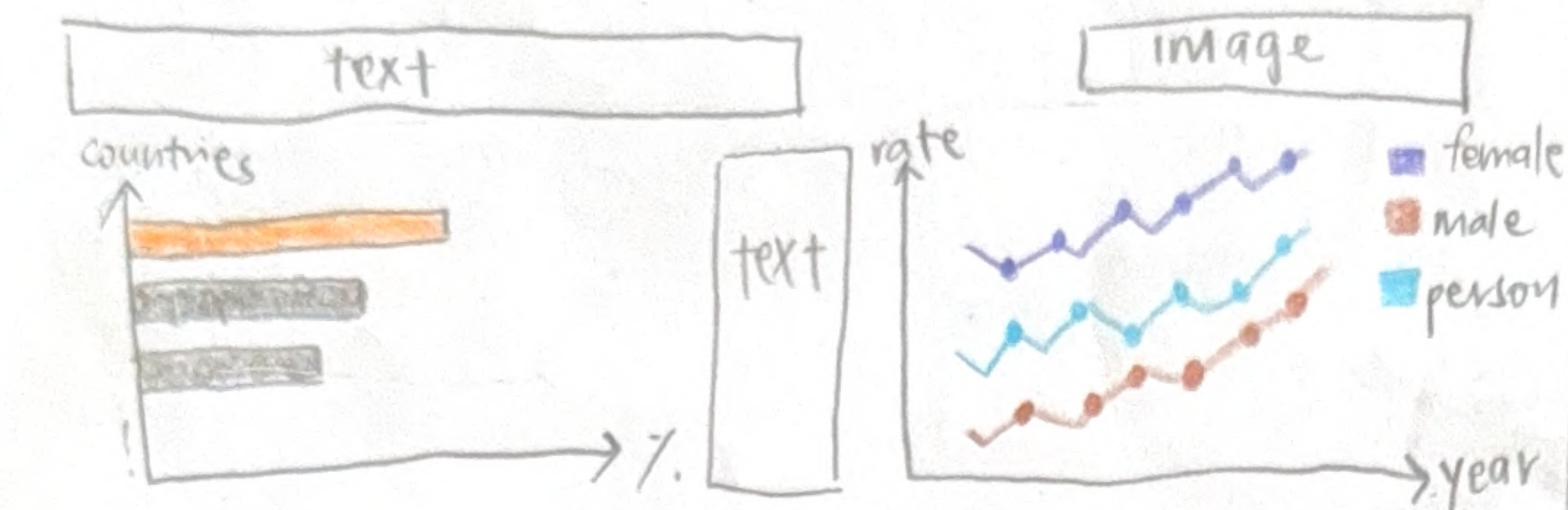
| text | image |

countries

rate

female
male
person

% year

sub heading

cancertype

text

25   40
20   5
10

cases

text

incidence | state | mortality
| NSW | | year
| VIC | | Year:
| QLD | | Sex:
| WA |

rate ← → rate

subheading

text

0   15

subheading

text

sun tanning | sunscreen

states | states
NSW | female | NSW
| male |
VIC | VIC
QLD | QLD
WA | WA

% | %

OPERATIONS:

filter / drop down (single) box
for sex and year, month

drop box   drag   geographical
            bar   chart

line graph → animation: expand over years

Tooltips → for all charts

FOCUS:

→ no main focus, all charts are important

→ main focus is on storytelling/ narrative format to get the message across

→ usage of various idioms so it is more interesting and engaging — capture audience's attention.

→ Annotations can be added where necessary to further highlight points in the chart and to reduce white space.

→ Adding of text / background context and highlight important numbers in bigger font size and colour

DETAILS:

→ Dependencies: visual studio, vegalite, java script, excel

→ Estimated time & effort: at least 1-2 days to clean data, 3-5 days to build all idioms and 2 days to do final layout.

→ Algorithms / maths: using counts percentages for charts

– use ABS, AIWH, Cancer Australia

→ specific requirements: larger visualisation for clarity.