

# INFORMATION AESTHETIC VISUALIZATION: EXPLORATION OF THE CALENDAR

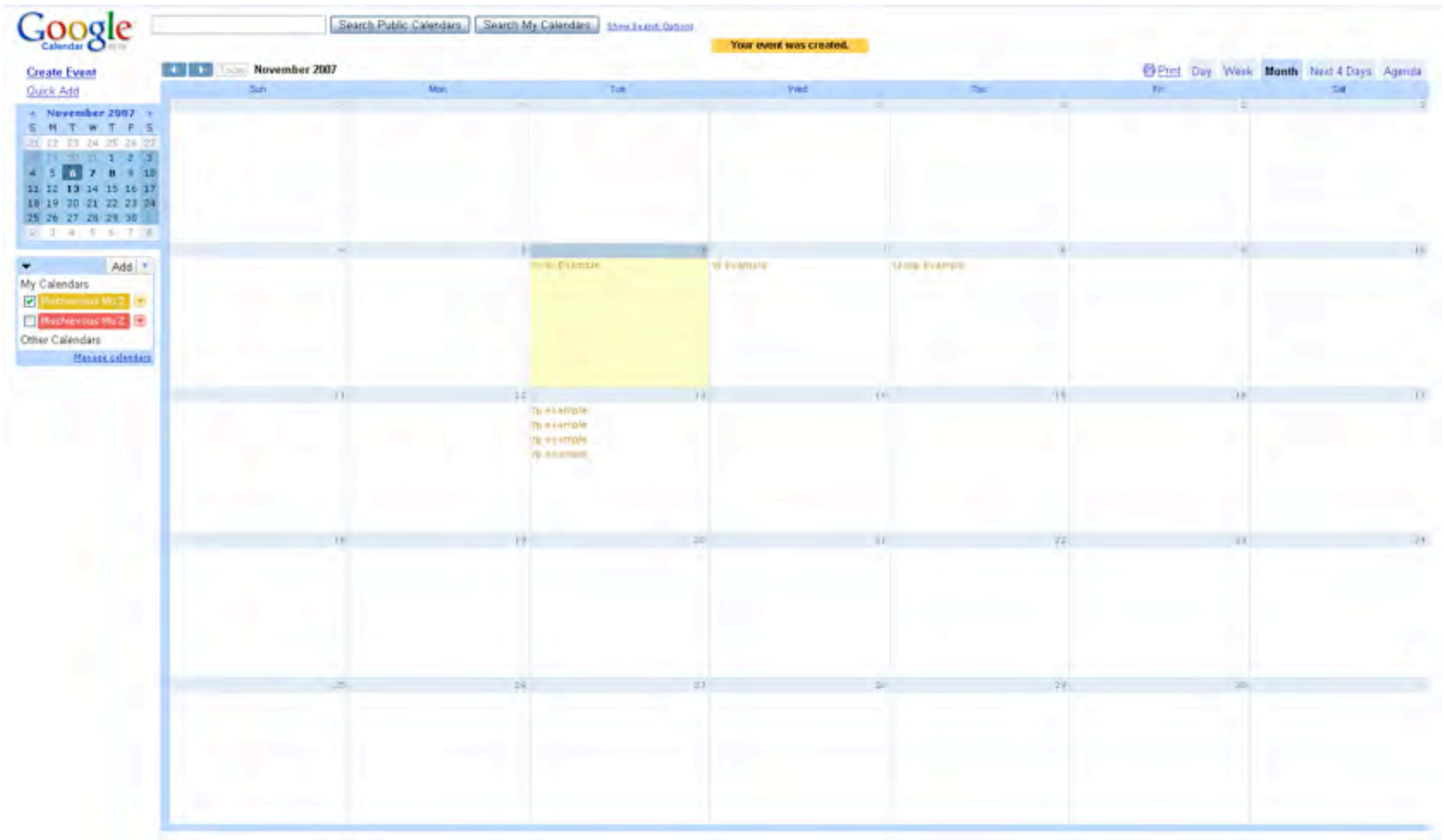
Kim N. Nguyen

# The Problem



- Most software calendar applications look like...

# The Problem



# The Problem

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- ❑ Current digital calendars look like traditional paper calendars
- ❑ Does not offer an alternative view
- ❑ Does not offer personalization
- ❑ Visually mundane and unappealing

# Significance of Problem

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- Current digital calendars:
  - ▣ Can share calendar with other people
  - ▣ Book events on other people's calendar
  - ▣ Set up recurring events

# Significance of Problem

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- Good – has helped evolved the many uses of the calendar
- Bad – has not properly addressed the presentation of information

# Significance of Problem

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- Why is that?

# Significance of Problem

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- Why is that?
  - ▣ lack of incentive
  - ▣ a tool
  - ▣ calendar data is not complex



# Plan of Work

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- Develop 5 metaphors
- Go through 2 design iterations
- Pick 1 metaphor to build a demo



## Design Phase

# Design Phase – Initial Brainstorm

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- Information on the Calendar
  - ▣ How to display?
    - Various views in regards to time
    - Event information (category, priority)
  - ▣ Day View – pictures/icons for events
- Input Events
- Metaphors

What needs to be done

## 5 design metaphors

Events (Input)  
- recurrence  
- priority  
- category

Display

Time  
Year  
Month  
Week  
Day

Event

All  
Recurring  
Priority  
Categories

Search

## Events

- time into  
- recurrence  
- priority  
- category  
- type

Where?  
Purpose? / what type?  
all day  
Multi-Step  
of event  
et categories  
no time

## Display

Time  
Year  
Month  
Week  
Day

Events  
All  
Recurring  
Priority  
Category

Search  
tools

## Task Analysis

- Input
- View
- Search

# Input Events

Title/what
Time (start/end) all day
Recurrence
Category/Tyres

Categories  
 B-days / anniversary  
 weddings  
 Appts / Meetings

All days	Span days	Specific Time
Birthdays Anniversary Holidays	Conference Vacation Trips Visit	Appts Meetings Entertainment / Social - Games - concert - dinner - workout What to call? Where would it fall?

Priority

- Urgent
- Important
- Standard

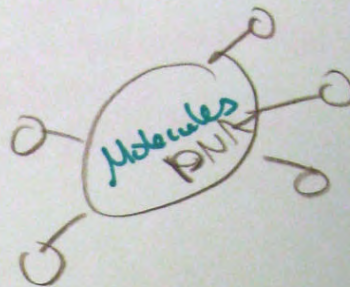
Colors / Scale

Recurrence

Daily  
 Weekly  
 Monthly  
 Yearly (bday / anniversary)



Time is  
an endless  
circle



Life is a  
highway

Amplify  
See 29 100 Info

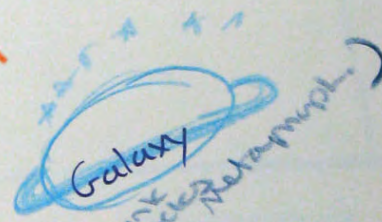
Bldg a wall  
by blocks



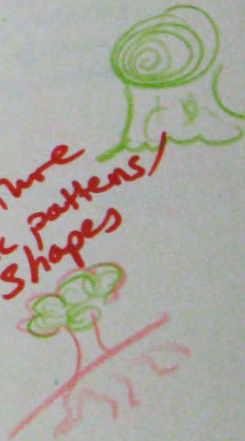
Metaphors



Time flies  
when you are  
having fun



Nature  
organic patterns/  
shapes

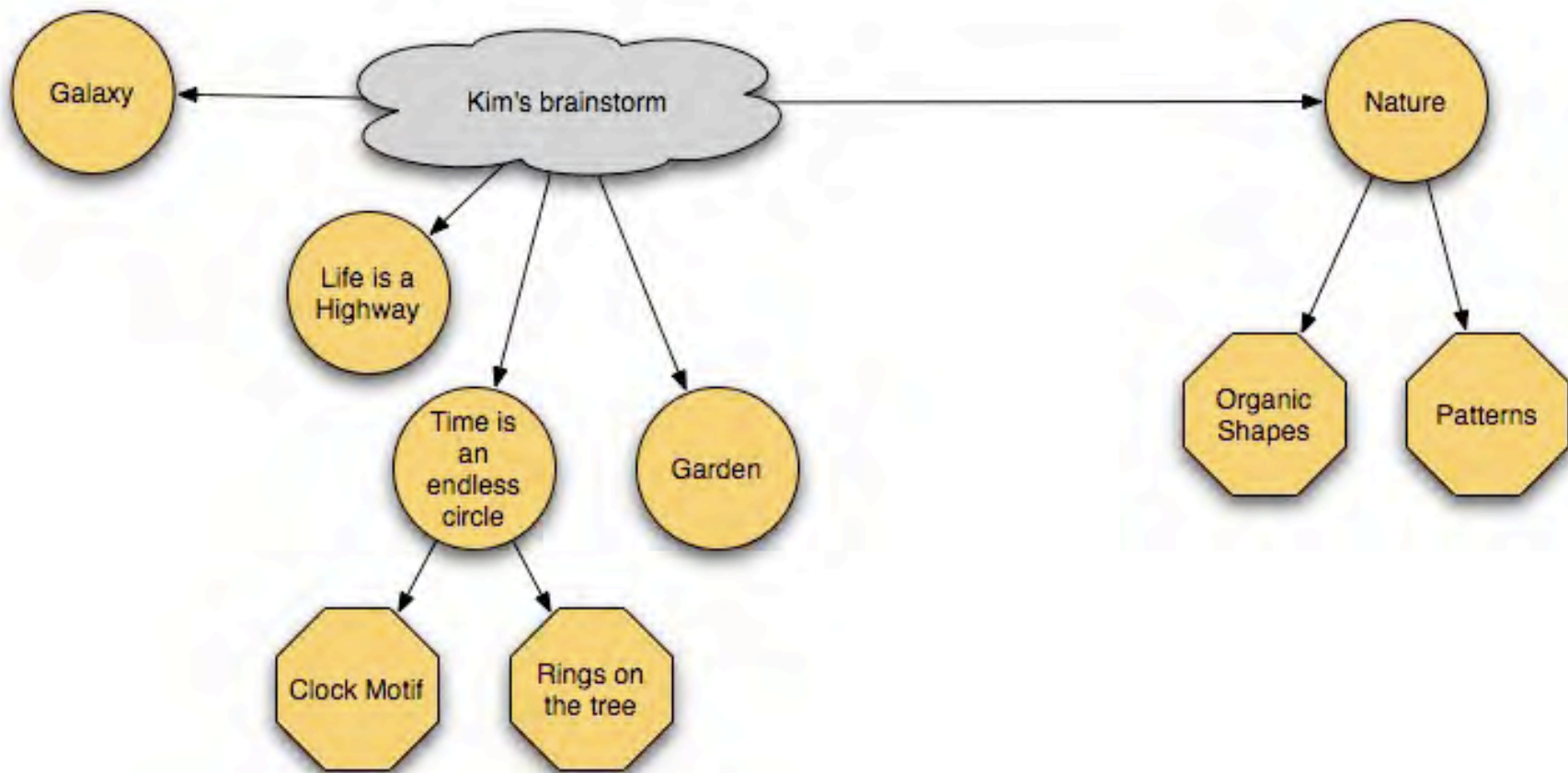


Subway  
Map



Music

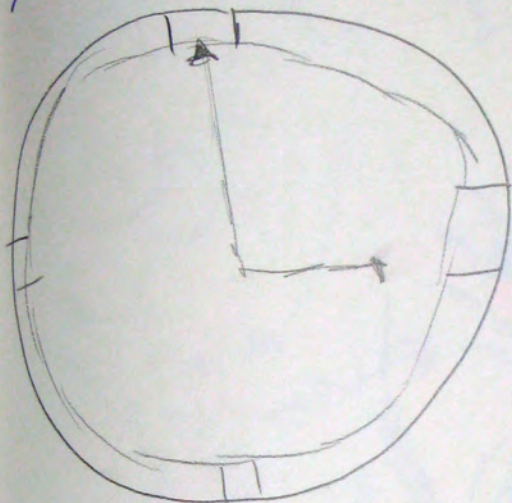
# Metaphors – Revision 1



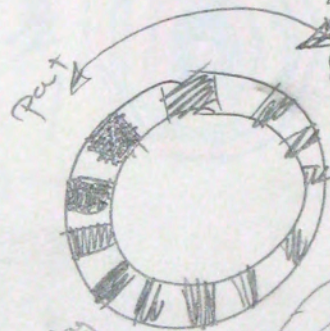


Circle

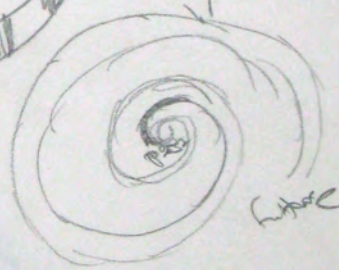
Day New



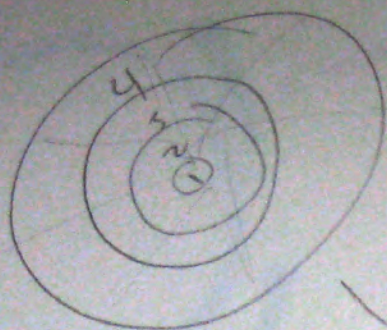
we  
can  
use  
this  
for  
day  
view  
to  
move  
the



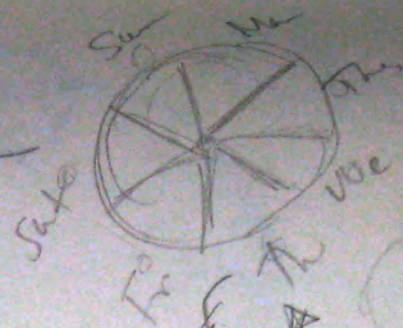
- all day  
- past  
- now!







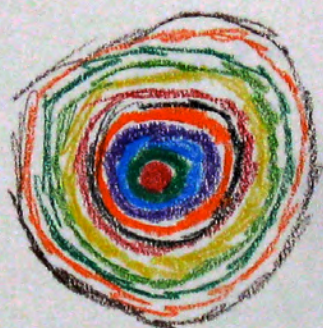
Month



Day



Months

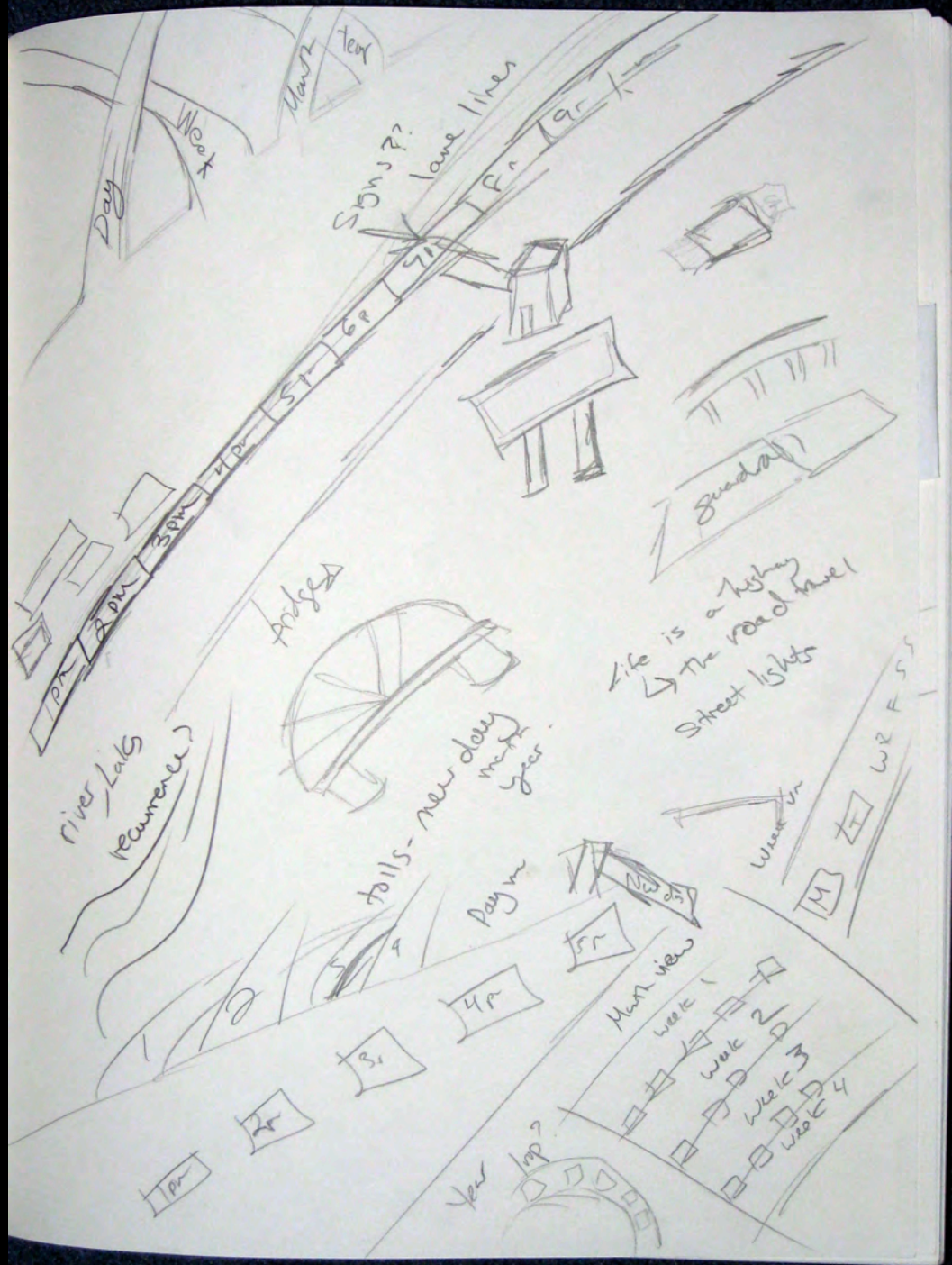


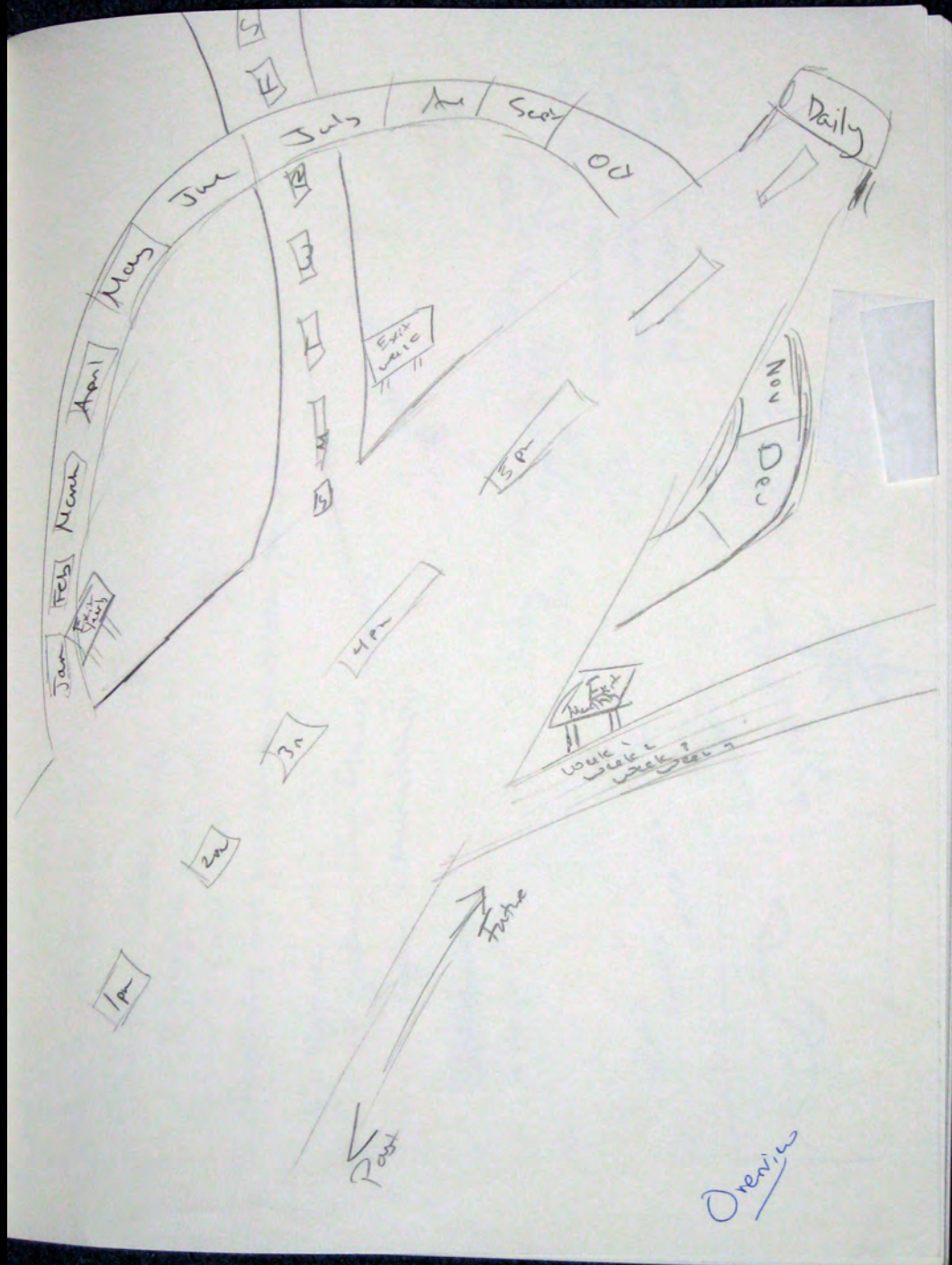
Week (1)

Days (1)











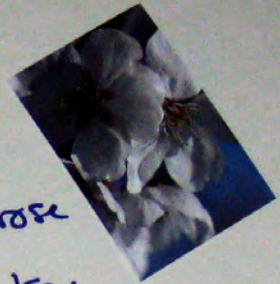


Sunflower  
- Daily

- Yearly  
- 6 petal flowers + 2  
- lily  
- freesia  
- orchid  
- iris



- Monthly  
- 4 petal flower  
- blue poppy  
- evening primrose  
- dame's rocket



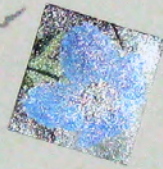
## Garden "Garden of Time"



Does this  
need to  
be literal

\* Stages of growth  
Seed → plant →  
bloom → death  
- recurrence - by flower

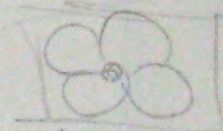
- can either  
be multiple  
flowers  
→ petals  
- or one flower  
→ different  
view



Daily



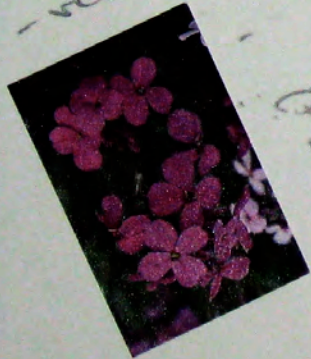
Weekly



Monthly



Yearly



Problem:  
When someone  
witnesses to perceive  
the past  
and sets  
to witness  
down let  
from  
And how  
to perceive

Weekly  
- 5 petal flowers  
w/ 2 leaves

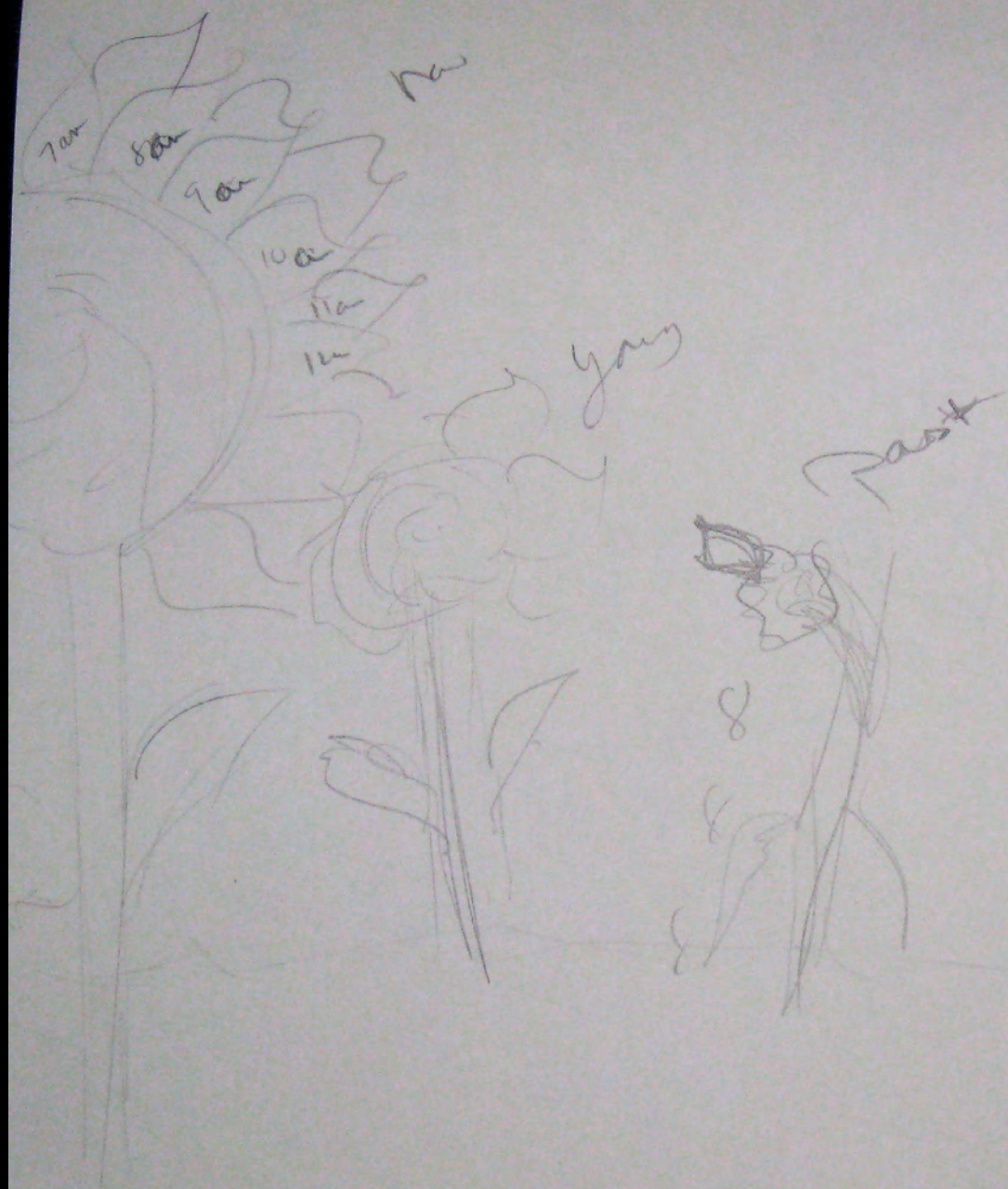
- cherry blossom
- daffodil
- Hawaiian Lei Flower



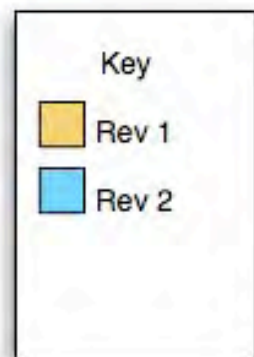
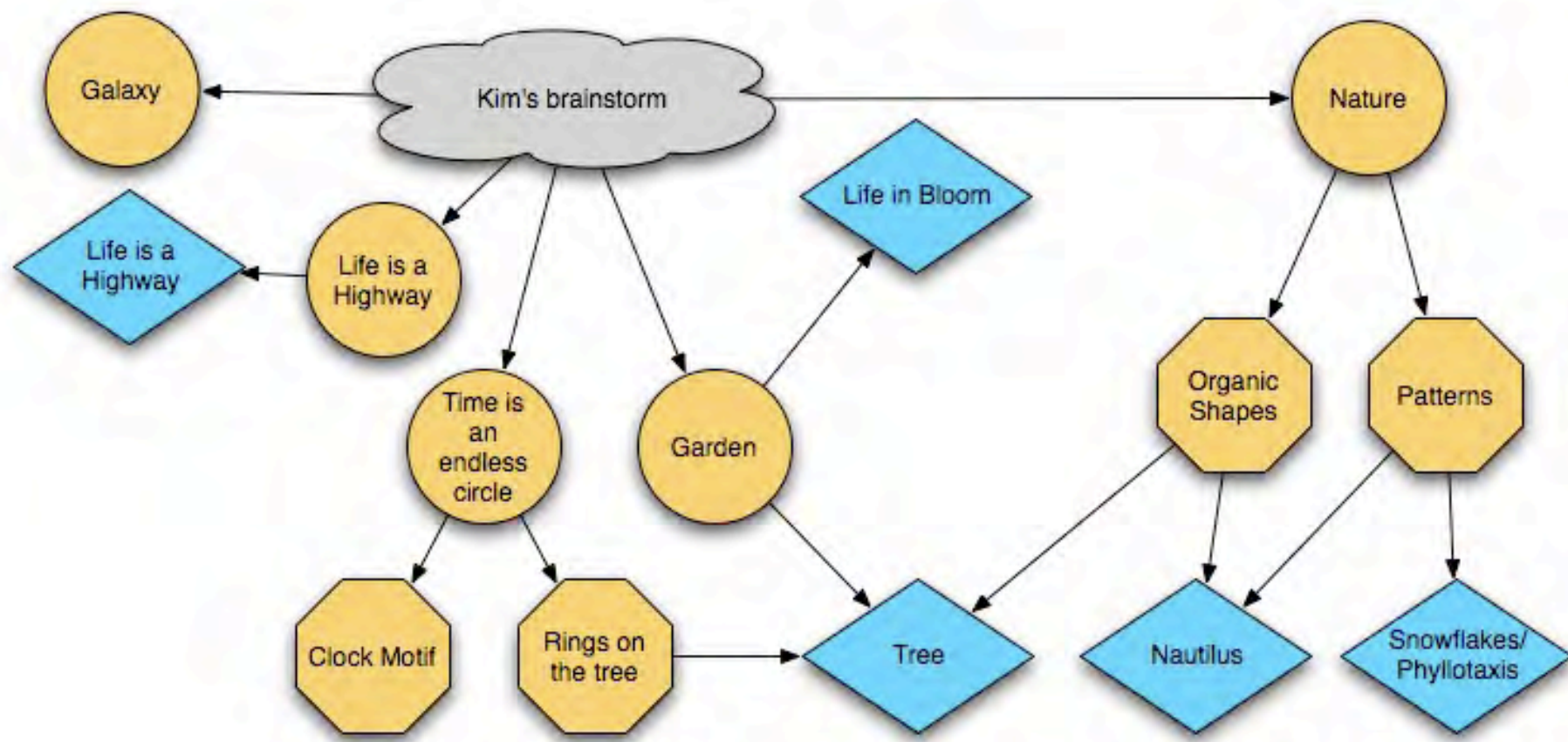
Should I  
represent  
for view?



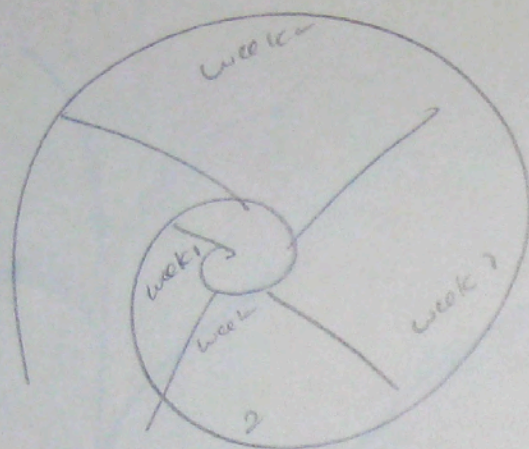




# Metaphors – Revision 2

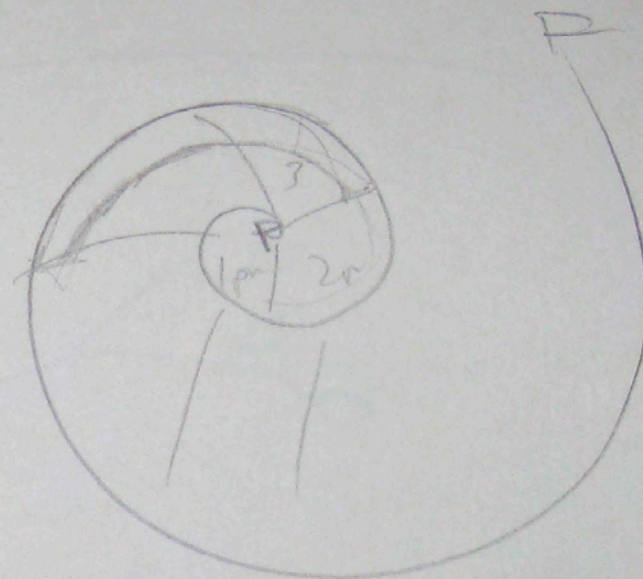






The idea of  
time bleeding  
into each other

Natilus



Cherry blossom tree

Tree  
2

Bamboo

1

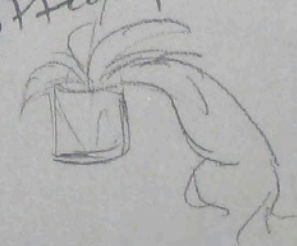
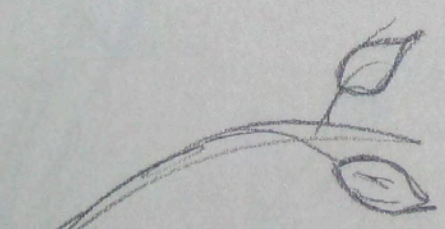
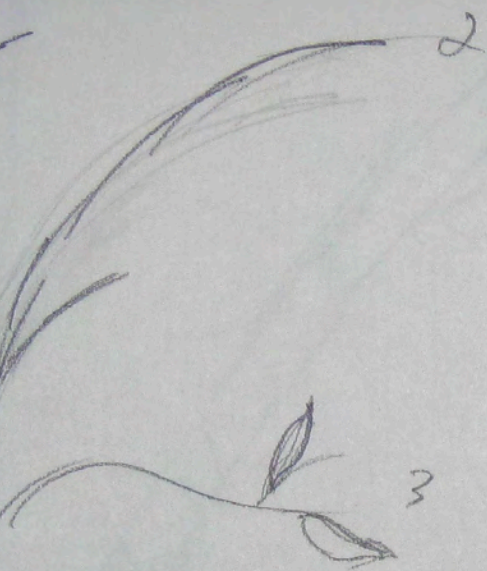
2

3

4

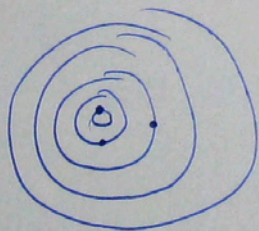
Bamboo

potted plant

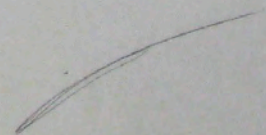
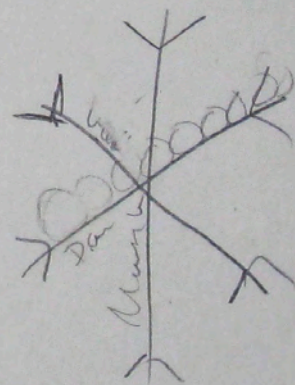
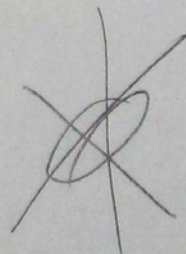
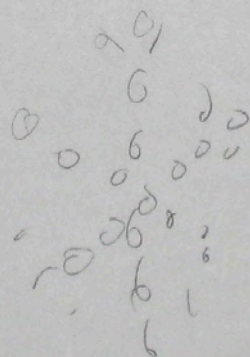
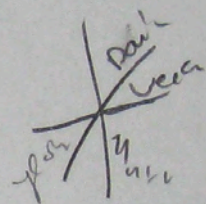
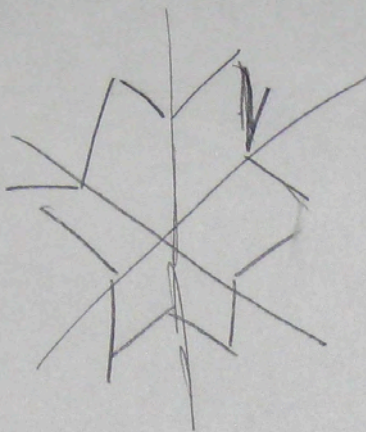




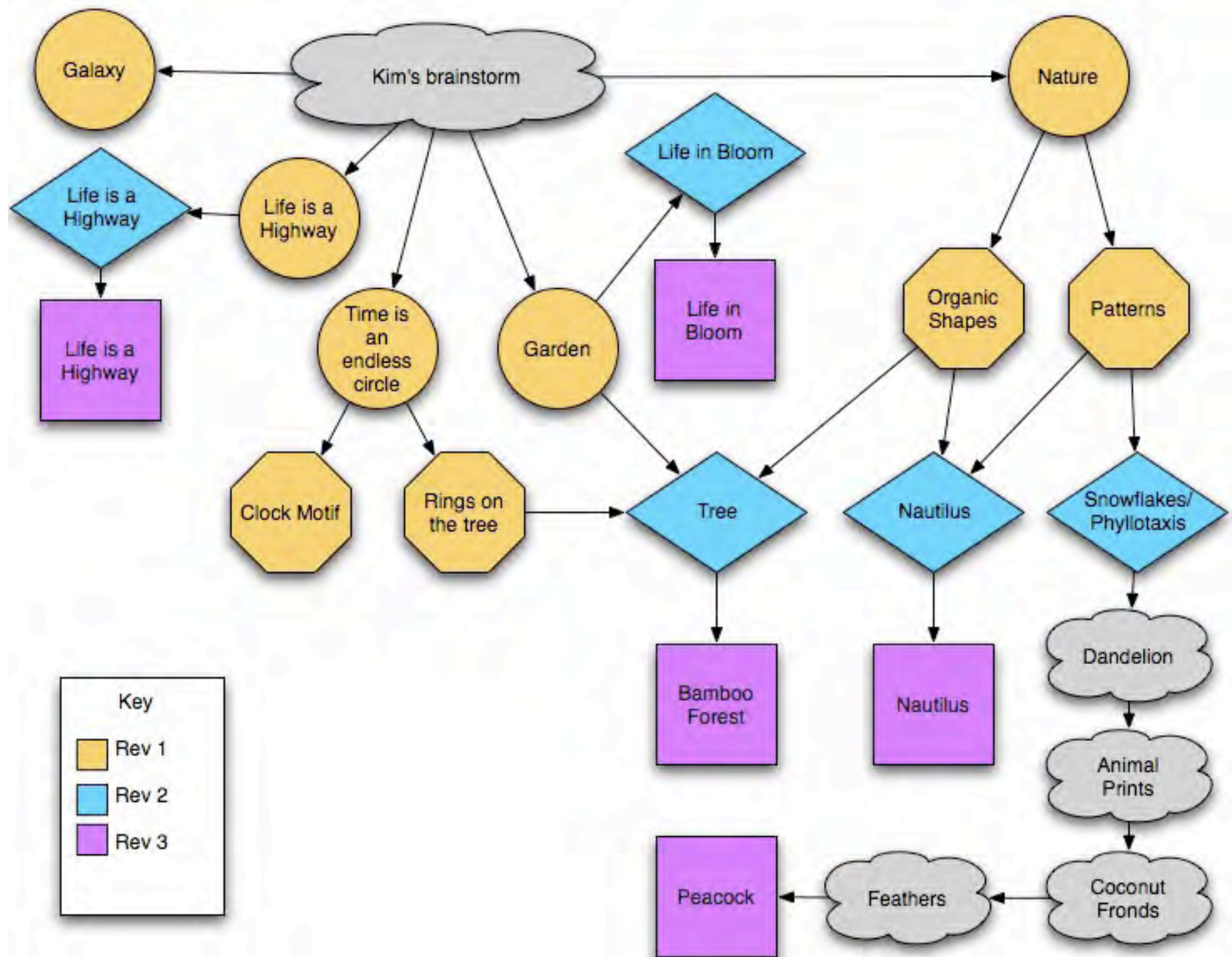
Phyllotaxis  
137.5



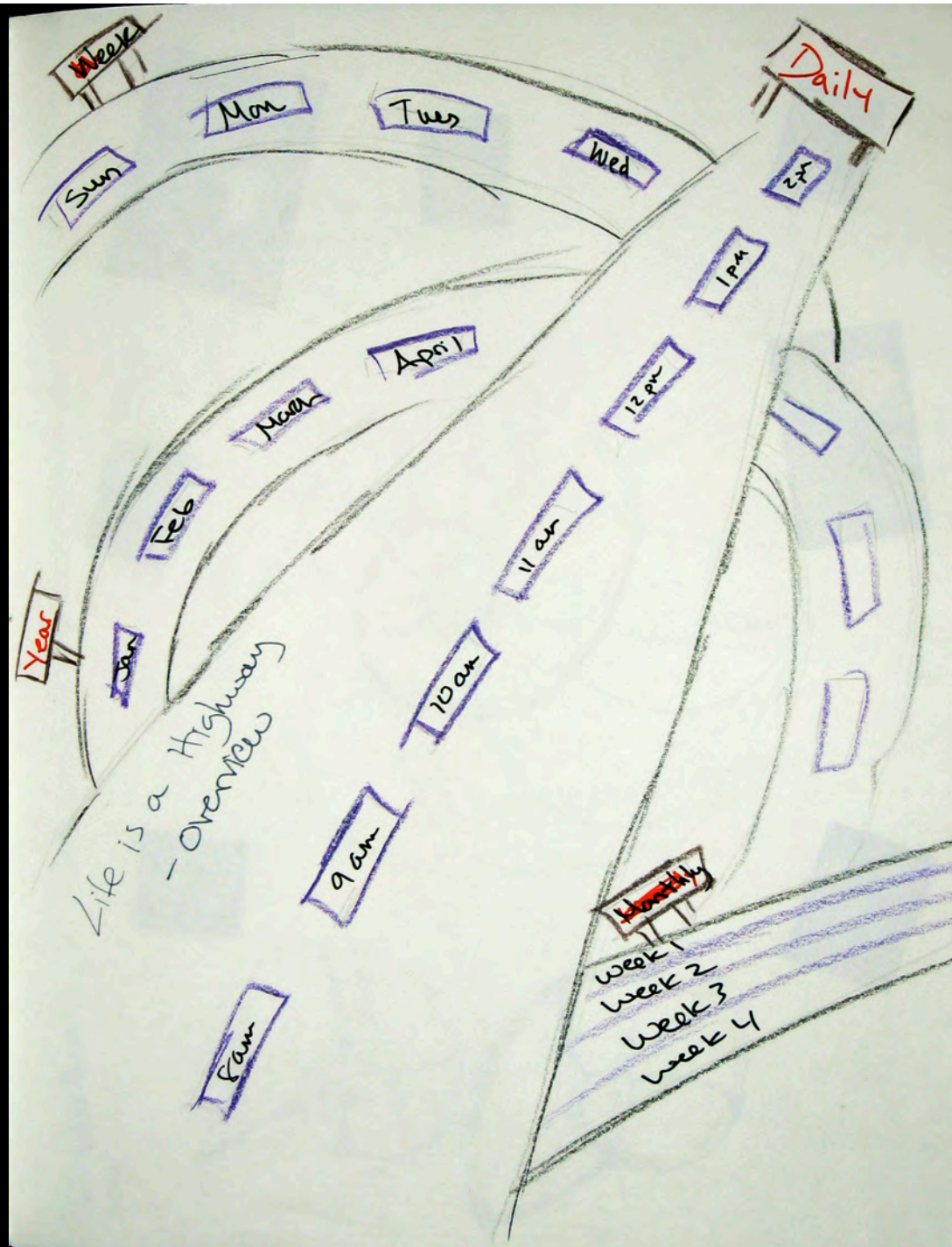
Snowflakes



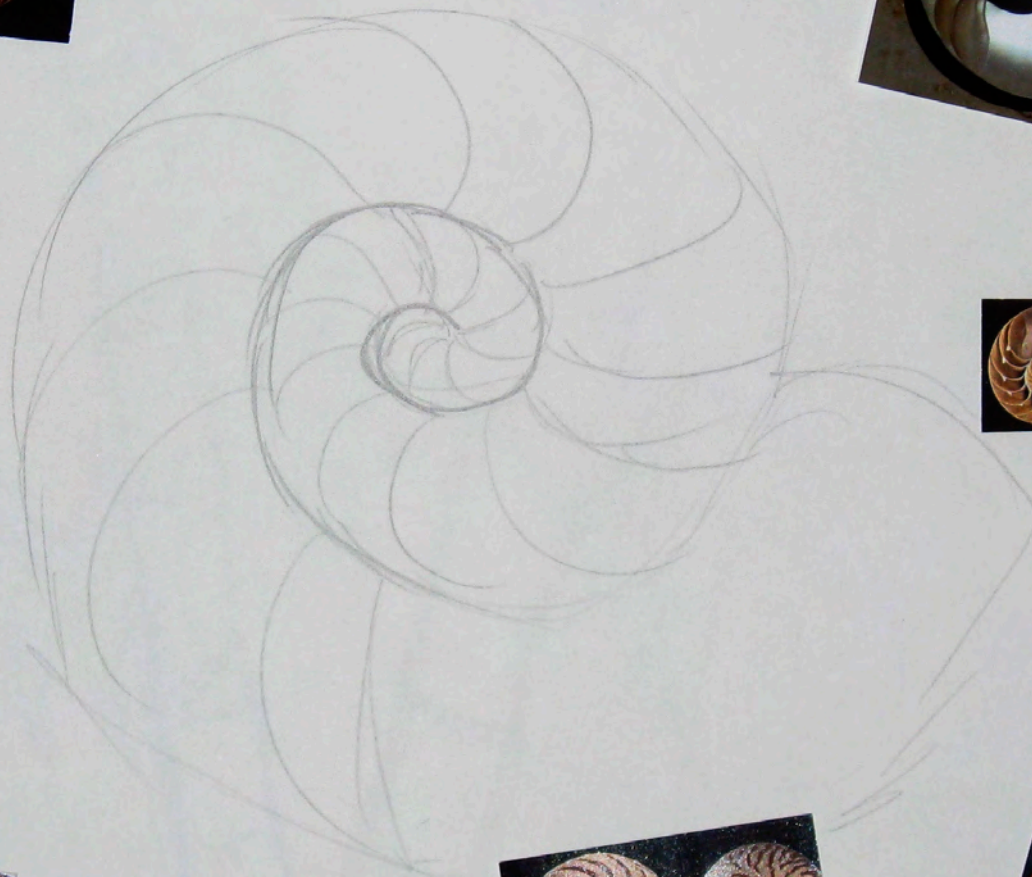
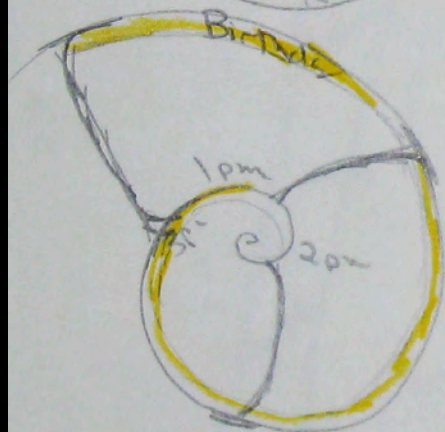
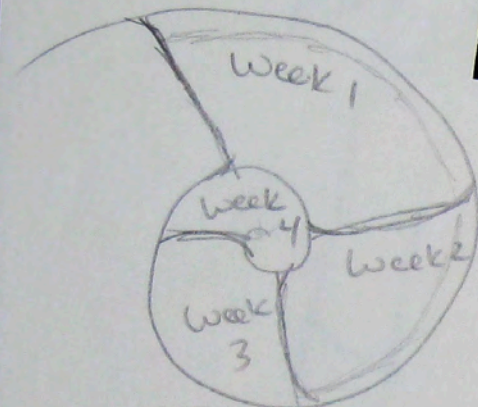
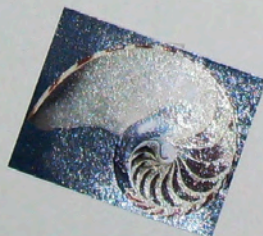
# Metaphors – Revision 3







# Nautilus





# Bamboo Forest

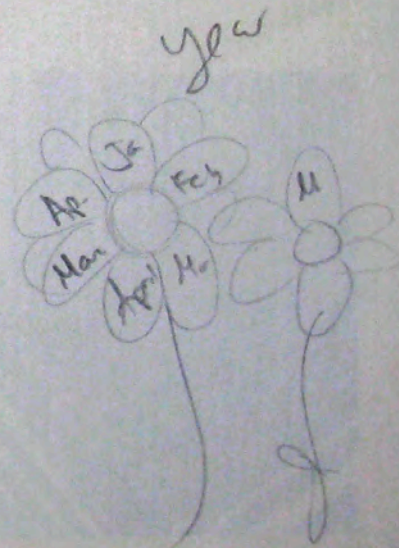
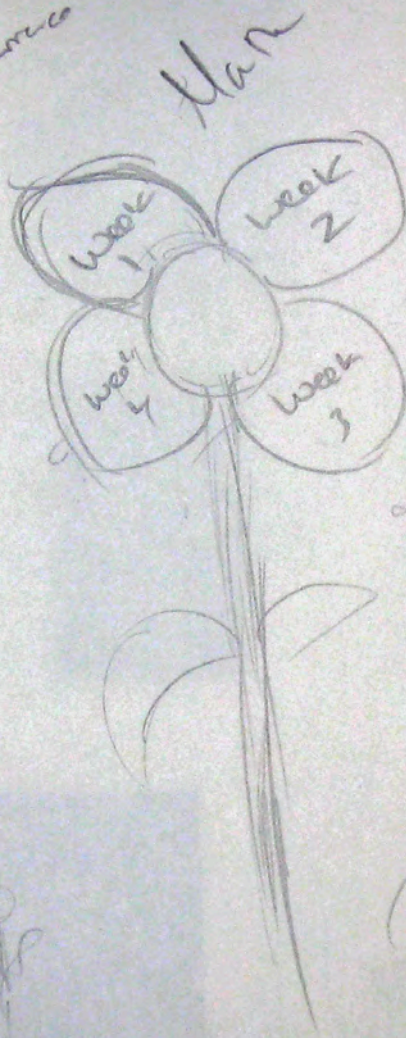
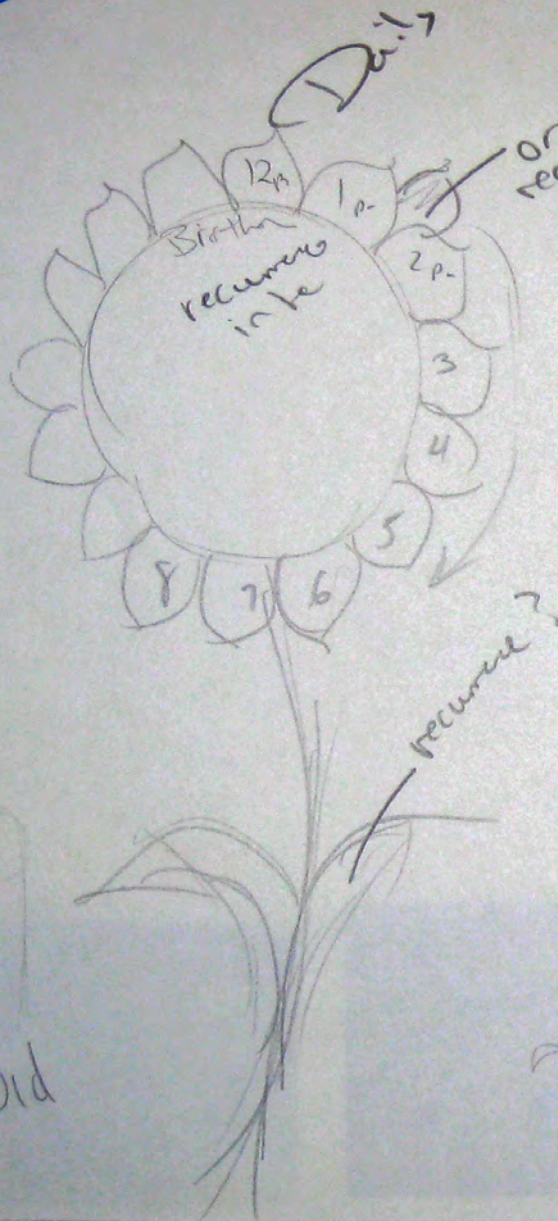




Gordon

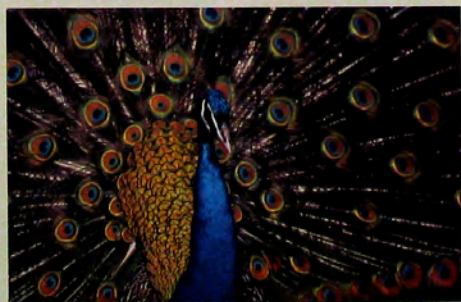
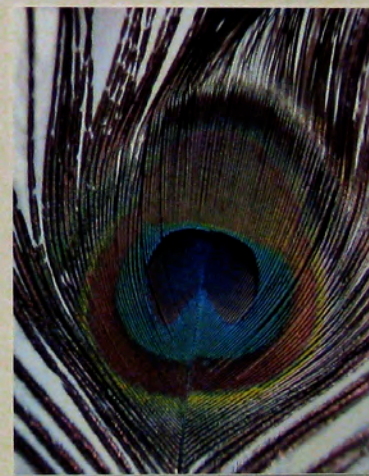
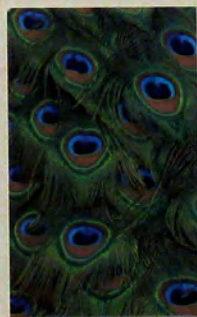
seed → prime → old

view??





# Peacock





The Mantra

Overview first,  
Zoom & Filter,  
the details on demand

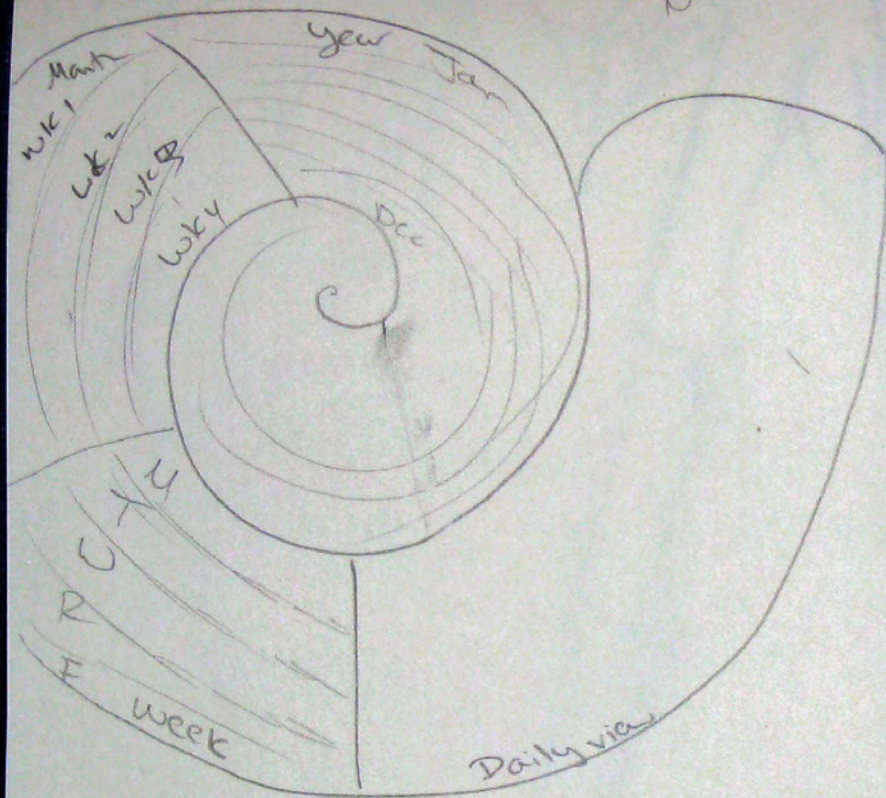


# Nautilus

Overview - seeing all 4 time views

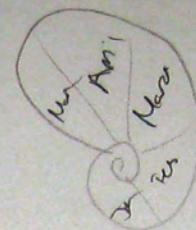
1 way

may be  
too much  
info more



- Can play around - 1 dimension

Year



Month



Week



Day





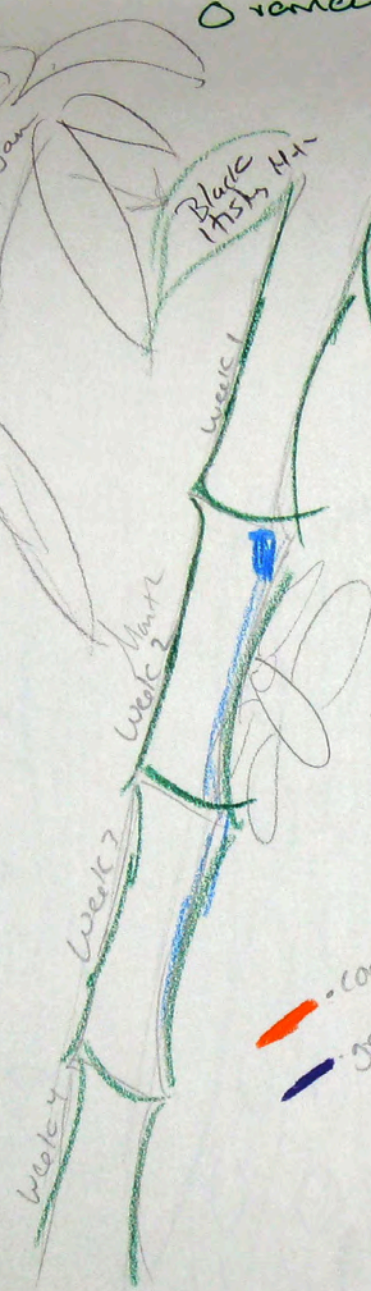
Bamboo ~~Forest~~  
Forest

Orange

2.5

Year

Dec Jan Feb Mar Apr May Jun Jul Aug Sept Oct Nov



Black Fishy Hat

Week 1

Week 2

Week 3

Week 4

• Conferees  
• Grandma visits

Week



Sun

Mon

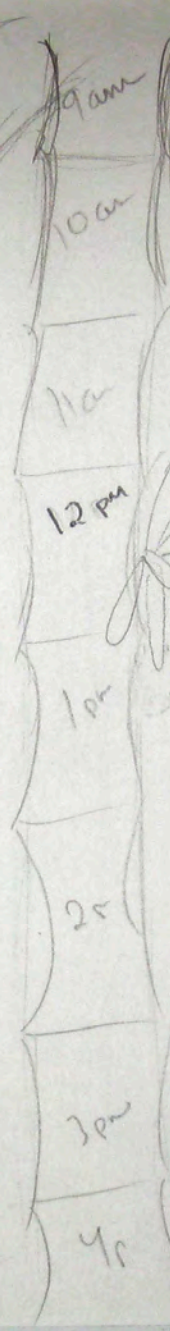
Tue

Wed

Thurs

Fri

Sat



9am

10am

11am

12pm

1pm

2pm

3pm

4pm

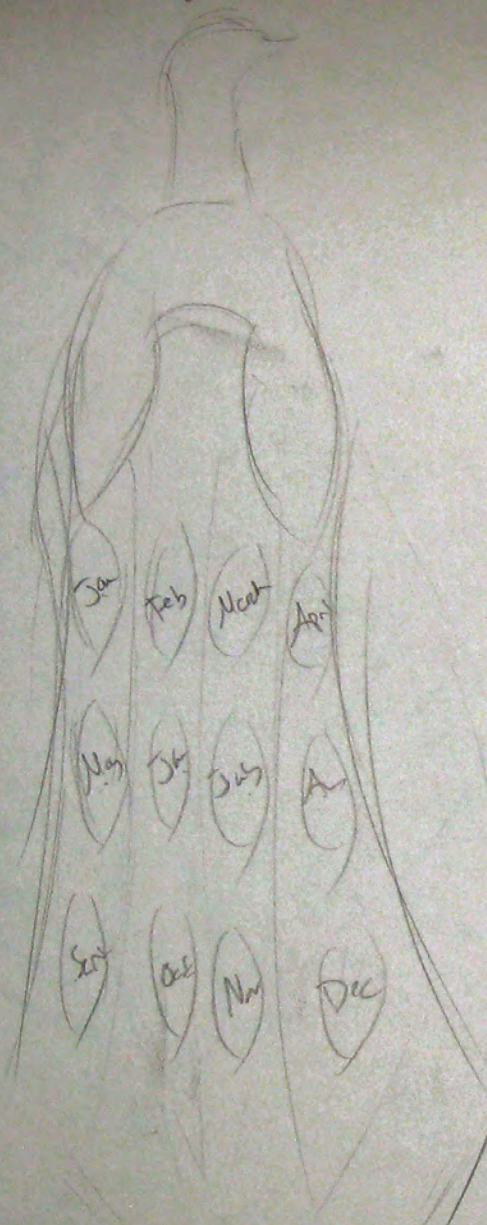
Dad's b-day

Bamboo  
Foggy, lots of  
with snow to  
where the  
user is  
Dragon

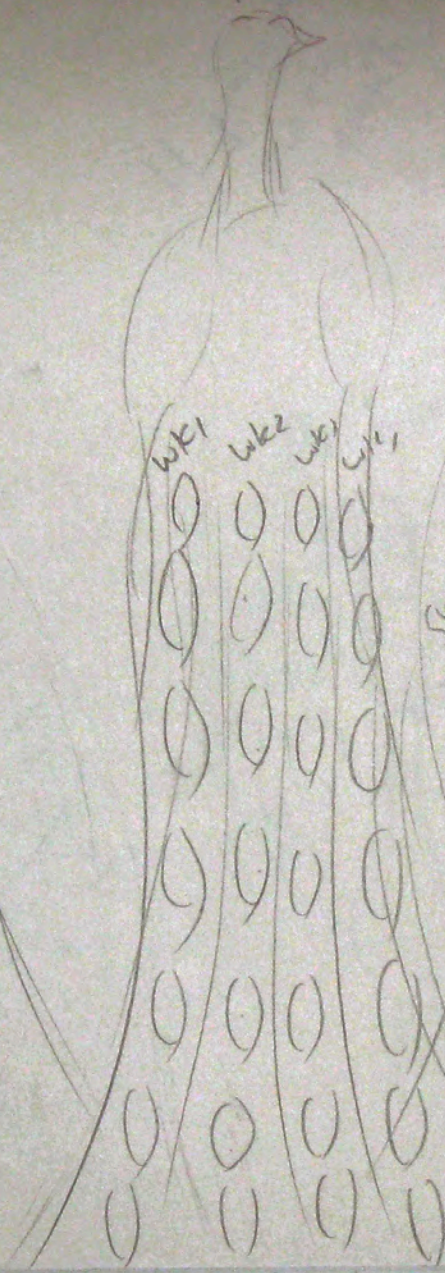


Peacock

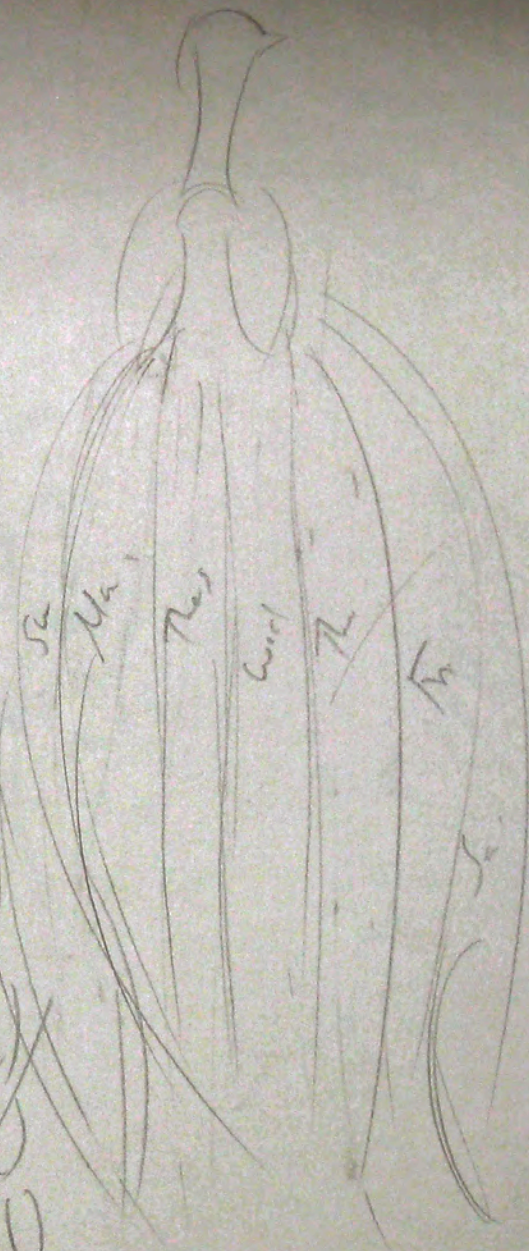
year



Man



Week







# Design Phases - Metaphors



- Some metaphors work better than others



# Design Phases - Metaphors

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- Some metaphors work better than others
- Ranking of the Metaphors:
  - ▣ Visual appeal
  - ▣ Interactions
  - ▣ Feasible

# Metaphors - Ranked

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1. Life is a Highway
2. Peacock
3. Nautilus
4. Bamboo Forest
5. Life in Bloom

# Final Metaphor

Time to decide (with help from my Capstone Committee) the one that will be built into a demo



And the final metaphor is...



And the final metaphor is...

Life is a Highway

# Design Phase

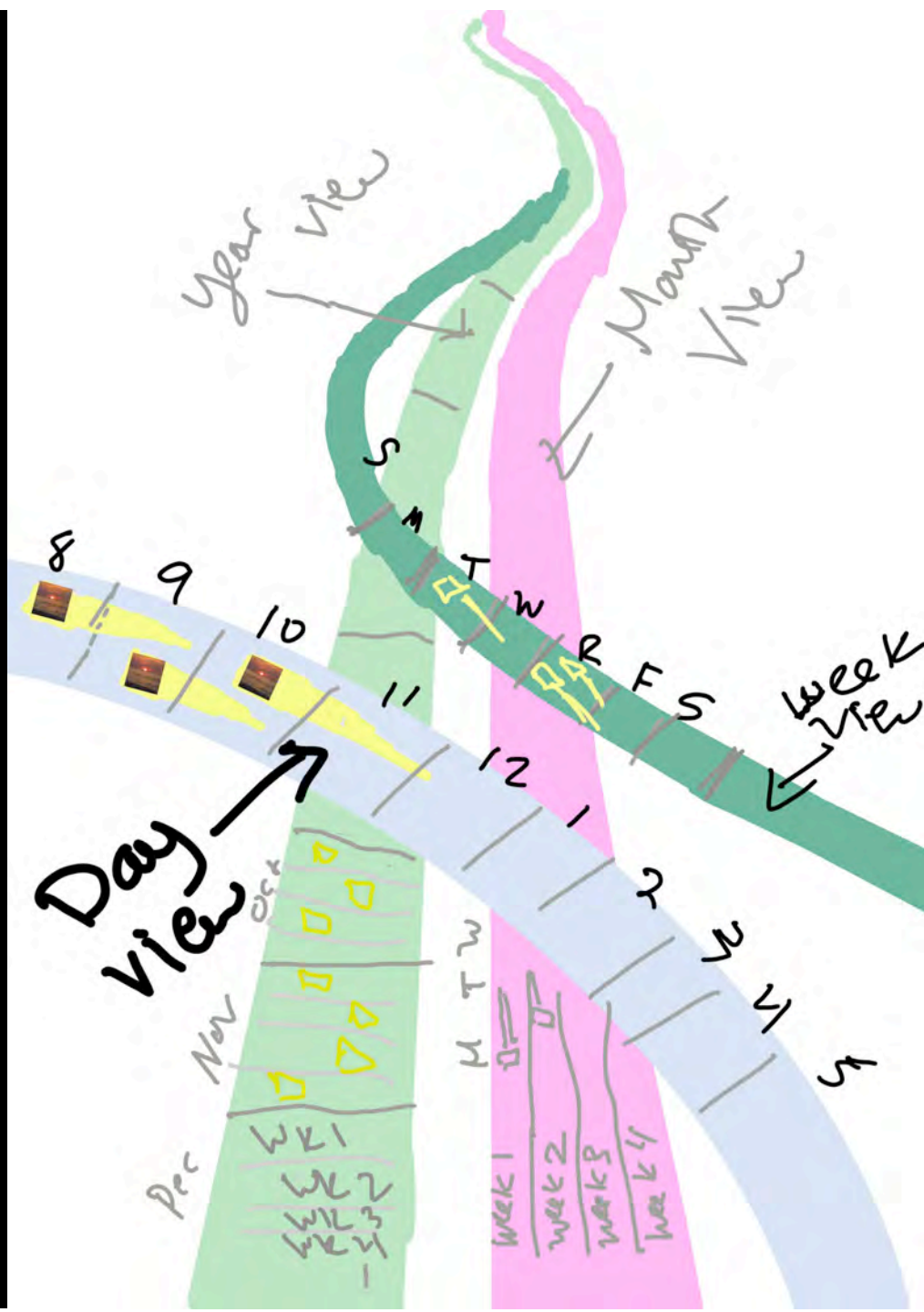
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- Flush out metaphor
- Finalized the categories

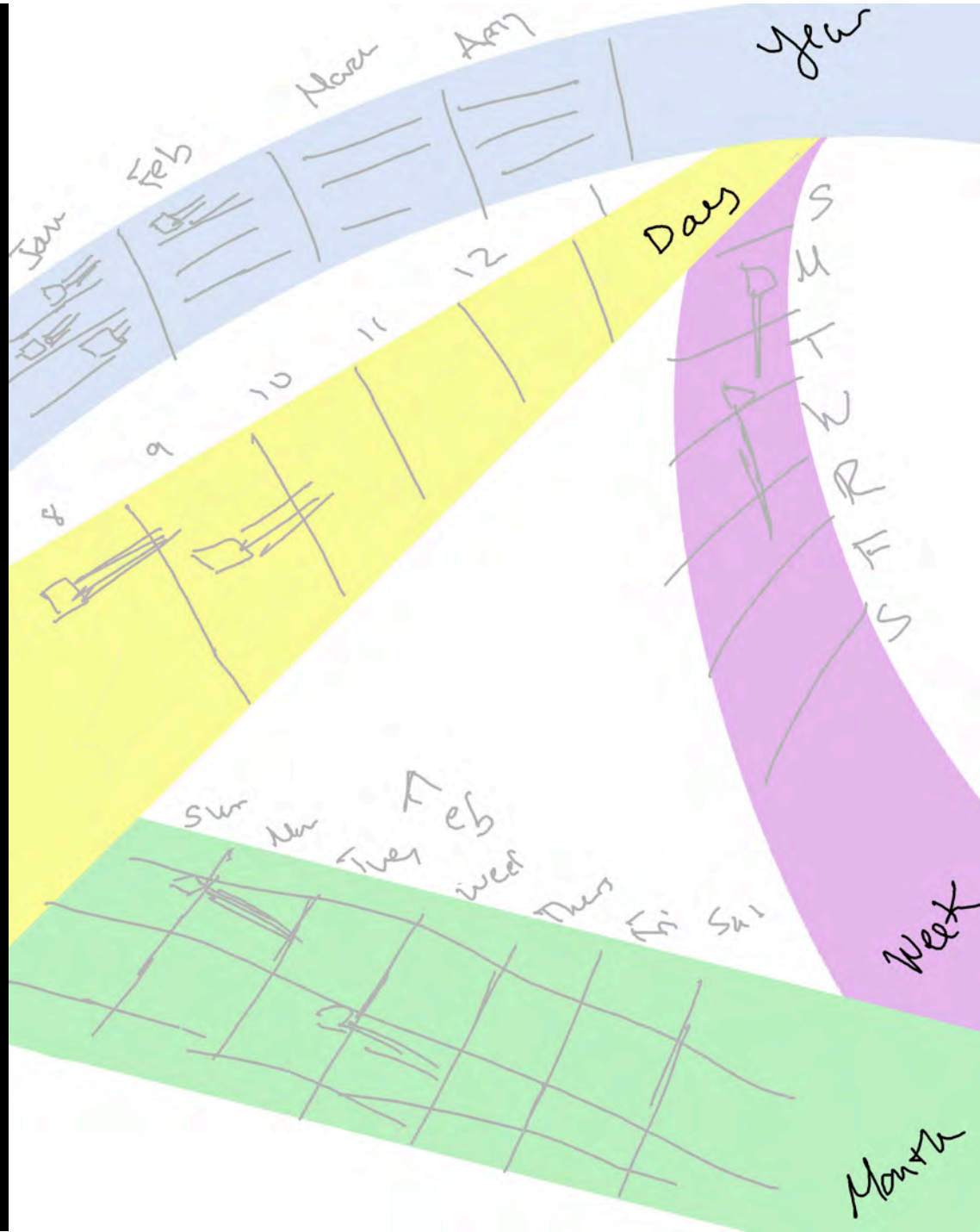
# Design Phase - Categories

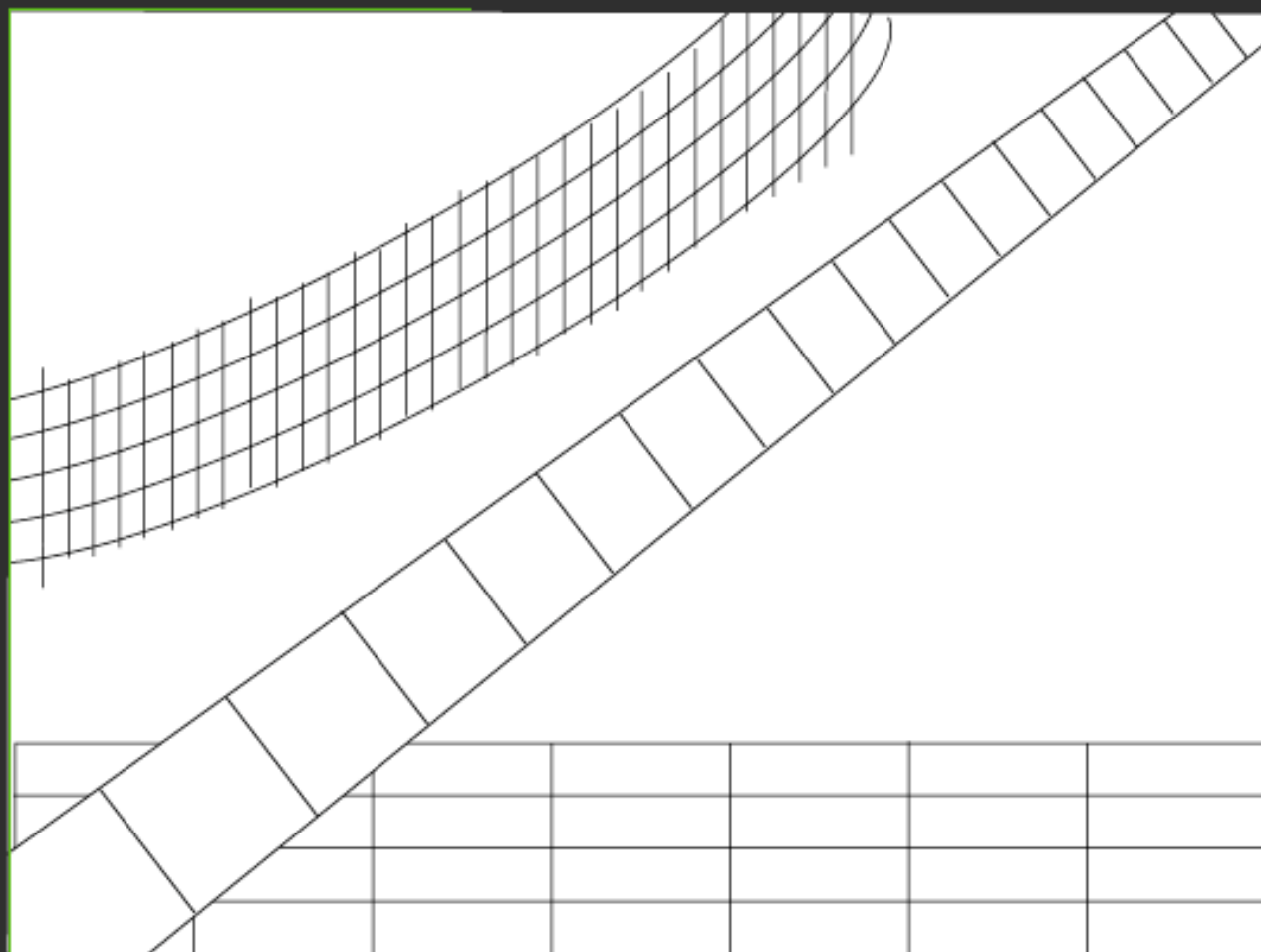
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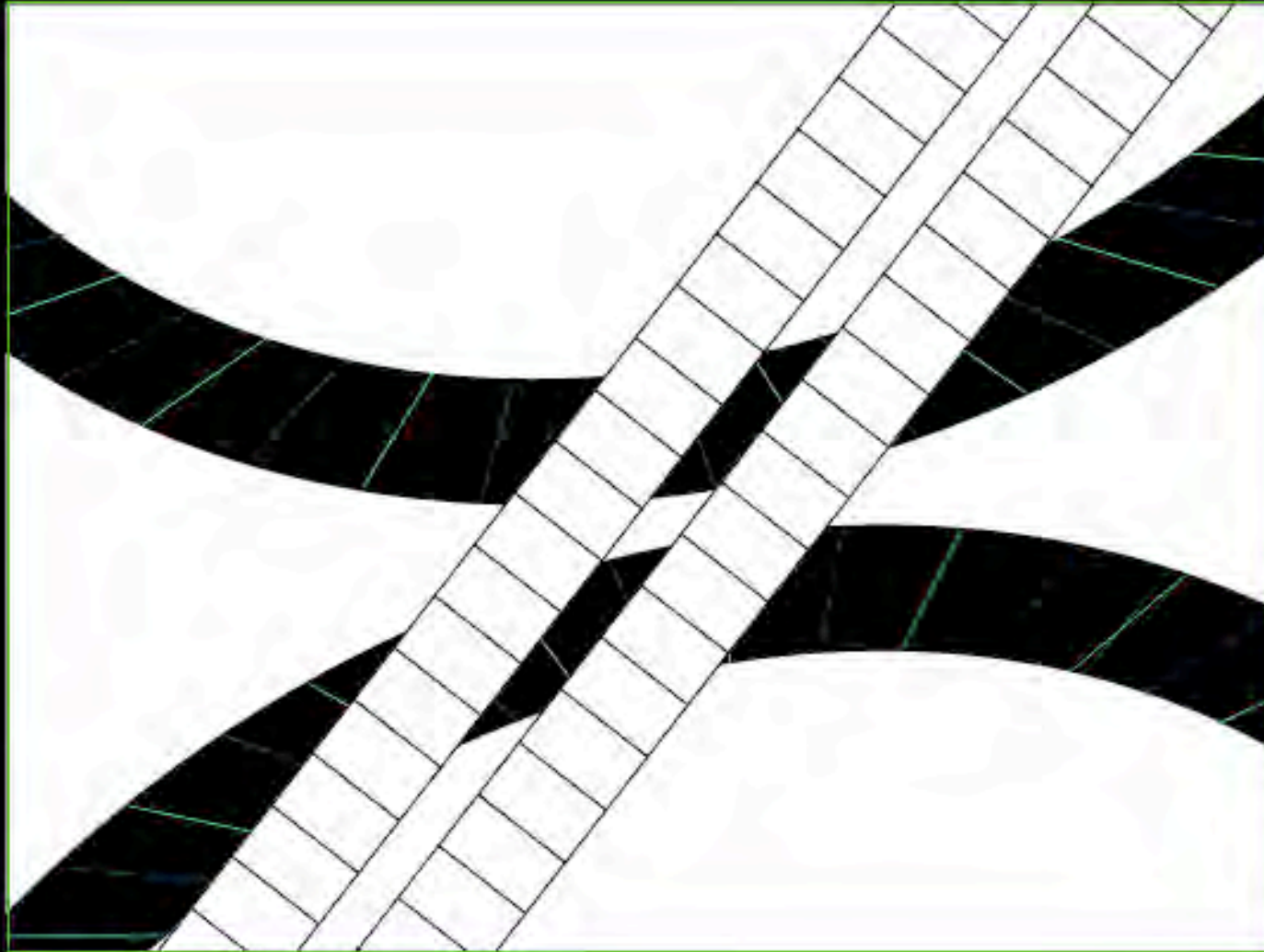
- All Day
  - ▣ Birthday
  - ▣ Anniversary
  - ▣ Holiday
- Span Days
  - ▣ Conference
  - ▣ Trip/Visit
  - ▣ Vacation
- Specific Time
  - ▣ Appointment
  - ▣ Meeting
  - ▣ Social











# Design Phase

Problems/Issues/Difficulties with the metaphor:  
Life is a Highway



View events by:

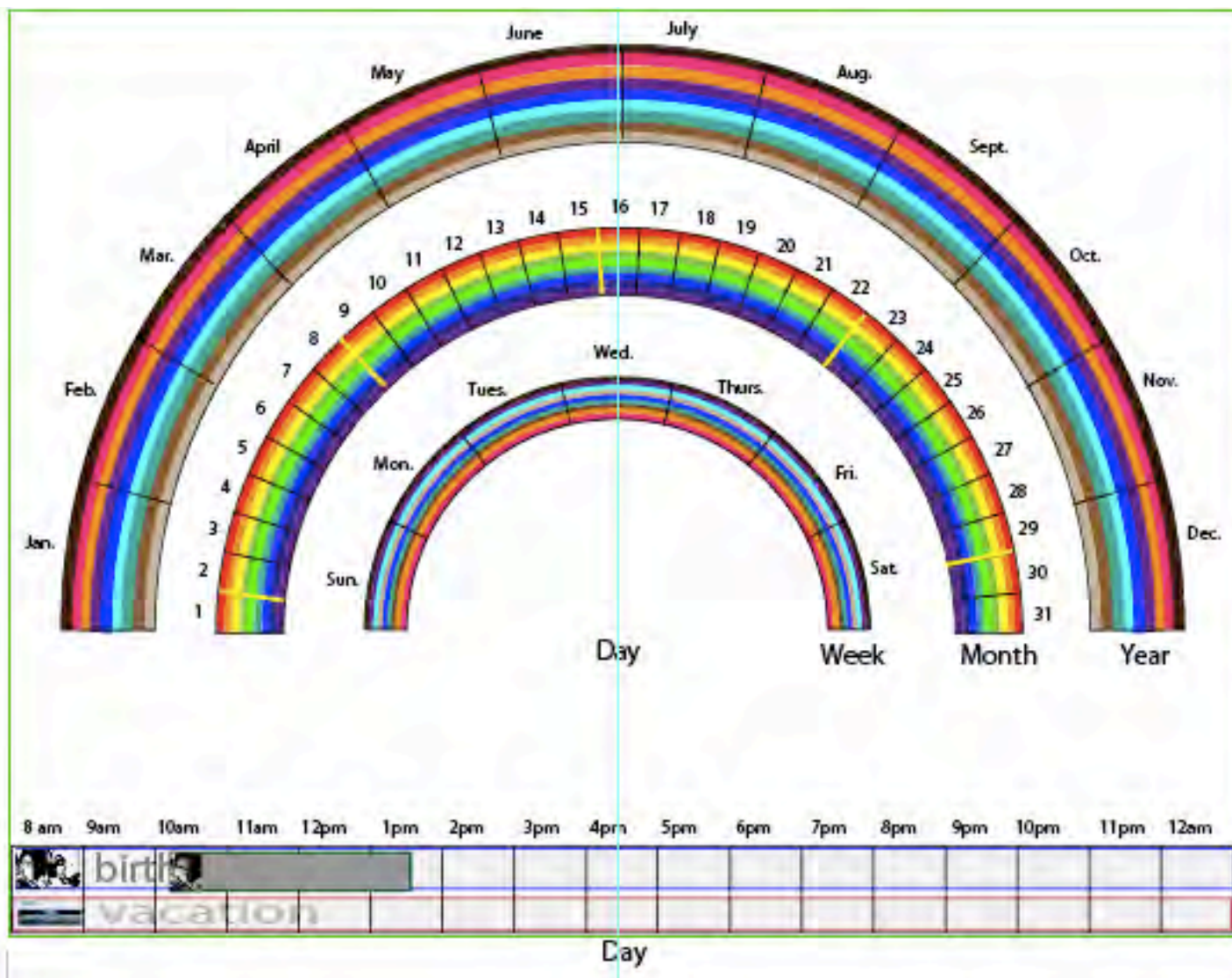
☐ Recurring

☐ Priority - USE SIZE

☐ Standard  
☐ Important  
☐ Urgent

☐ Category

☐ All Day  
☐ Birthday  
☐ Anniversary  
☐ Holiday  
☐ Span Days  
☐ Conference  
☐ Trip/Visit  
☐ Vacation  
☐ Specific Time  
☐ Appointment  
☐ Meeting  
☐ Social

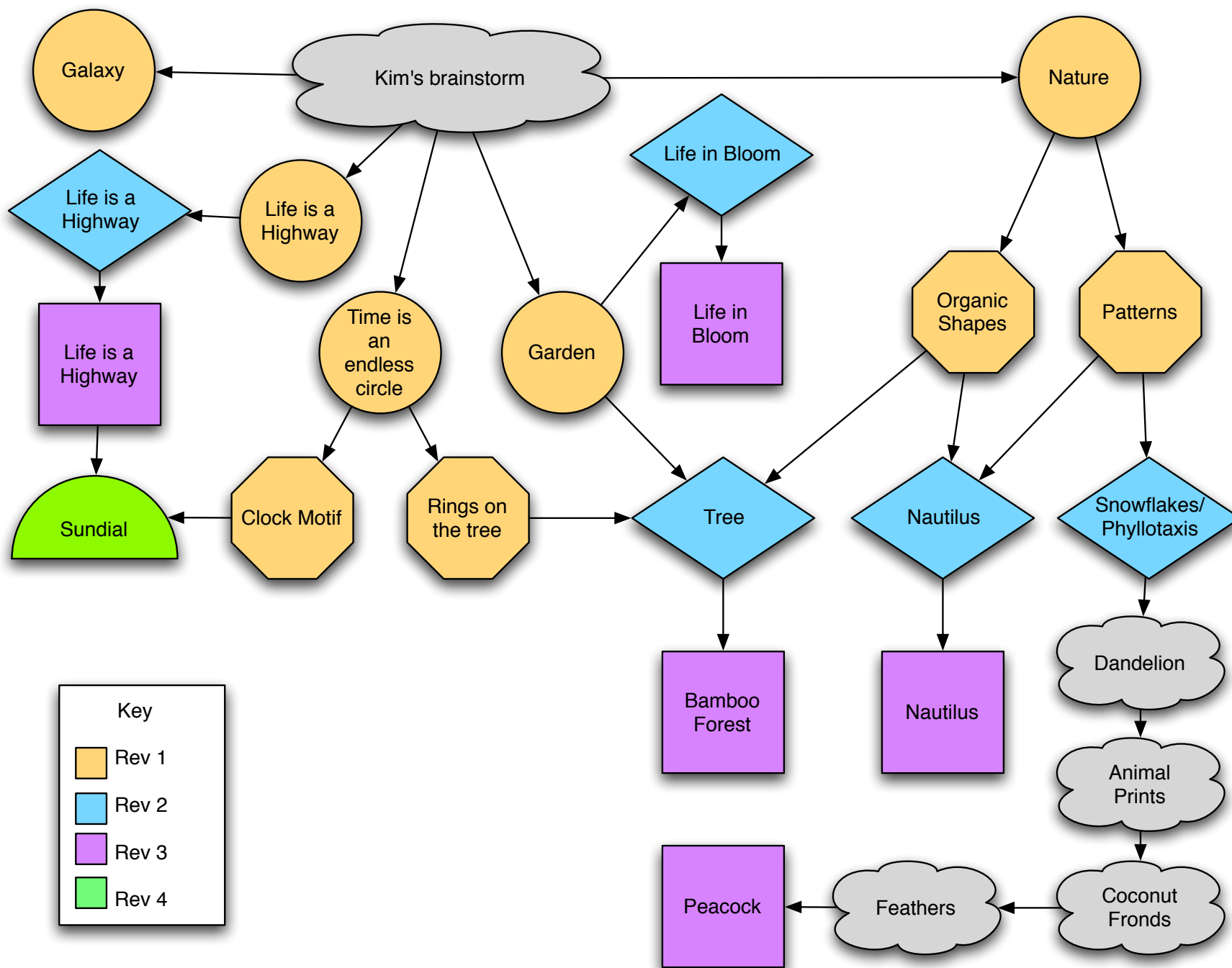


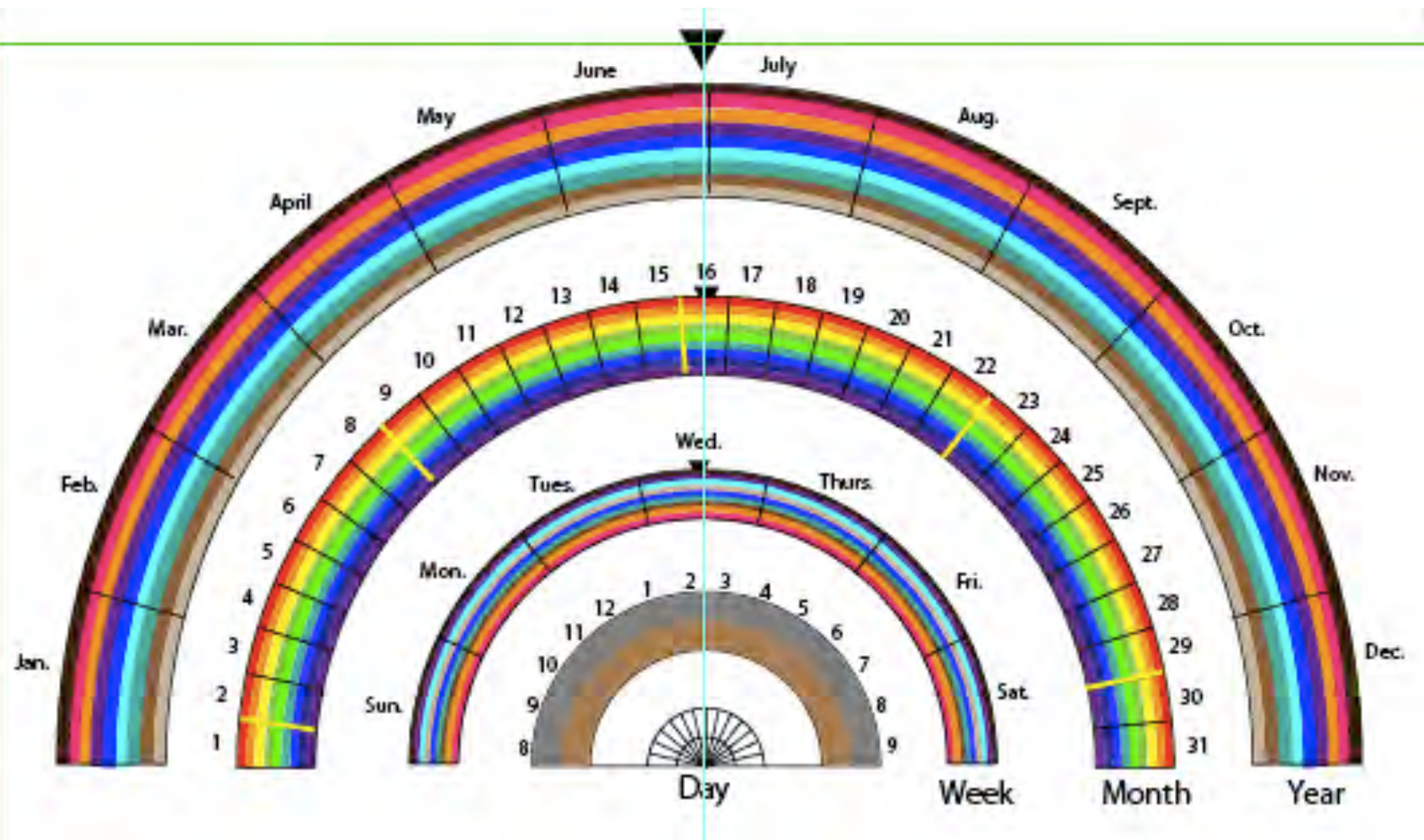


# Goodbye...

So long Life is a Highway!

Hello, Sundial!









- ☐ All Day
  - ☒ Birthday
  - ☐ Anniversary
  - ☐ Holiday
- ☐ Range
  - ☐ Conference
  - ☐ Trip/Visit
  - ☐ Vacation
- ☐ Specific Time
  - ☐ Appointment
  - ☐ Meeting
  - ☐ Social



- Add Event
- Filter/Search Events
- Image Manager
- Help

Stroke Weight:

- Layers
- ☒ Layer 1
  - ☐ Layer 2
  - ☐ Layer 3
  - ☐ Layer 4



# Implementation Phase

# Implementation Phase

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- Software:
  - ▣ Adobe Flash and ~~Adobe Flex~~



# Implementation Phase

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- Software:
  - ▣ Adobe Flash and ~~Adobe Flex~~
- Difficulties:
  - ▣ Graphics
  - ▣ Dynamic vs Hard Coding

**D-E-M-O!**



And now...

The Walkthrough



# Conclusion

The good, the bad, and what I learned

# Conclusion – Design

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- Not easy to come up with 5 metaphors
- 3 design iterations
- Metaphors: 3 vs 5
- Life is a Highway => Sundial
- Design is in the details

# Conclusion – Implementation

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- Poor Documentation
  - ▣ No mask within a mask
  - ▣ Embed font when rotating text
  - ▣ Cannot change a thickness of a stroke via code
  - ▣ Dynamic text box cannot resize itself
- Active segment is bigger
- Drop down segments
- Animation, Dynamic, and Hard-coding



# Conclusion

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- ❑ Time was a factor
- ❑ Coding skills
- ❑ Would not change a thing (except for maybe more time)



# Future Work

# Future Work

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- ☐ Actual implementation
- ☐ Sundial?



# Future Work

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- Start from the beginning
  - ▣ Details
  - ▣ Usability
  - ▣ Further explore the presentation of information of an event
  - ▣ Data (ex. Google Calendar)
  - ▣ Image library
  - ▣ Interactions

# Questions/Comments?

Bring it!

# Some Terminology

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- Information Aesthetics:
  - ▣ Represent abstract data
  - ▣ Interactive interface
  - ▣ Visual appeal
- Information Aesthetic Visualization:
  - ▣ Sub-field of Information Aesthetics
  - ▣ Uses visualization techniques related to information visualization and visualization art

# Some Terminology

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- Information Visualization:
  - ▣ amplify cognition by developing effective visual metaphors for mapping abstract data
- Visualization Art:
  - ▣ also known as data art
  - ▣ express the subjective experience of our information society by artistically motivated but data-driven forms