

# A3 8-step problem solving worksheet

Problem

Responsible person  
**Pat**

People involved  
**Drew**

Date  
**April 1, 2015**

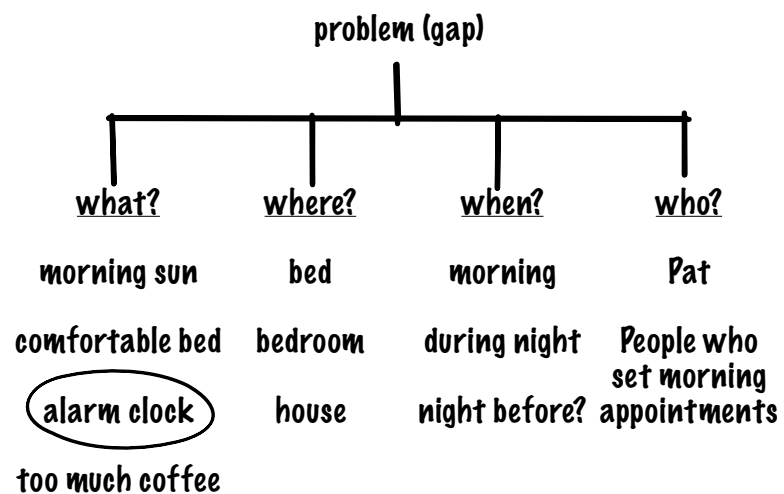
**I woke up late this morning and missed some stuff**

## 1 Clarify the problem (Plan)

Current situation **Once in a while - about one morning every few months? - I oversleep**

Desired situation **I wake up no later than the time I choose, 100% accurately, every morning**

## 2 Break down the problem (Plan)



Point of occurrence → my alarm clock

I went to my bedroom and noticed that the time on the alarm clock was not set right (compared to the wall clock in the hall and my watch). There was NO alarm set on the alarm clock, even though I had it set for 6:15 like I always do.

It's an electric alarm clock. Plugged in to nightstand, all good

I also saw that it looked like the power might have gone out during the night. I had to reset another clock in the kitchen and there were some branches down outside.

Finally, I know that most of the time the alarm clock wakes me up. I think it's loud enough to wake me up.

## 3 Set the target (Plan)

**Make sure that my alarm clock goes off EVERY morning and wakes me up - if there's an alarm set**

## 4 Root cause analysis (Plan)

I didn't wake up on time

Because

My electric alarm clock lost the time AND the alarm I set

Because

←----- actual root cause of the problem

The power went out

Because

There was a thunderstorm last night

Because

Weather systems and climatic patterns exist on planet Earth

Root cause - my alarm clock loses the time and alarm I set if the power goes out, and the power goes out sometimes

## 5 Develop countermeasures (Plan)

Possibilities:

- Buy a generator
- Never go to sleep
- Have many alarm clocks set
- Sue the power company
- Solar panels where I live
- Battery-powered alarm clock
- Alarm clock w/ battery backup
- Have alarm clock wake up Drew; Drew then wakes me up
- Rooster to crow @ appropriate time?

Highest impact, lowest difficulty countermeasure:

- Try a battery-powered alarm clock

## 6 Run experiments to validate countermeasures (Do)

Owner Support people Dates

1. Buy an alarm clock w/ battery backup (Pat & Drew go to store - April 2)
2. Set up new alarm clock at nightstand, with alarm set for following AM (Pat - April 2)
3. Verify alarm wakes up Pat; Drew will wake up Pat if needed (April 3, Pat responsible)
4. UNPLUG alarm clock to test battery backup (Pat - evening of April 3)
5. Verify alarm wakes up Pat; Drew will wake up Pat if needed (April 4, Pat responsible)
6. REPLUG alarm clock after #5 (April 4, Pat)
7. Figure out which alarm clock to standardize on (April 4, Pat & Drew)

## 7 Monitor results from experiments (Check)

April 2 (#2)  
OK

April 3 (#3)  
Alarm woke up!

April 4 (#5)  
Alarm good

We noticed that the alarm clock has a weird thing on the display that tells us if it's not plugged in (or if the power is out)

## 8 Standardize successful countermeasures (Act)

- Keep the new alarm clock
- Figure out what to do w/ old alarm clock

I'm confident the countermeasure will help me reach the target - so there's no further work to be done on this one