Some real world examples of Research might be:

- Befriending vendors to get Parts more easily
- Getting machinery that builds Widgets automatically
- Upping your social media game for better marketing

Roll to figure out how much ↗ the Research will cost. We'll say it's a 2, which is less than the ↗3 you have left. Lucky you! (A roll of 3 would have also succeeded. 4 and up would not.)

Remember how you've only been using the first column of ↗ values with the dark outline? You decide you want to be better at Making, so you cross out the previously used values to outline the whole column of new ones to their right.

BUY	+ ⬡	− ↗ 0	0	0	0	− Ⓢ 1
	+ ▣	− ↗ 1	0	0	0	− Ⓢ 2
	+ ⚙	− ↗ 2	1	0	0	− Ⓢ 3
	+ ▦	− ↗ 3	2	1	0	− Ⓢ 4
MAKE	+ 🔊	− ↗ 1	0	0	0	− ⬡ ▣
	+ 📻	− ↗ 2	1	0	0	− ⬡ ▣ ⚙
	+ 🕹	− ↗ 3	2	1	0	− ⬡ ▣ ⚙ ▦
SELL	− 🔊	− ↗ 2	1	0	0	+ Ⓢ 6
	− 📻	− ↗ 3	2	1	0	+ Ⓢ 18
	− 🕹	− ↗ 4	3	2	1	+ Ⓢ 40
PM	↗ < 0	**Burnout:** *Lose next turn*				
	↗ >= ⚄	**Research:** *Lower ↗ cost*				

Nice! For the rest of the game, all Widgets will consume one less ↗, no matter how many of them you make! With this Research, all 🔊s are effectively "free" to Make.)

HANDOFF

When your turn's done, for games with multiple players, hand the die to the next player so they can take their turn.

STARTING THE NEXT TURN

The values in your PM column carry over to the empty cells in the next turn's AM column, as denoted by the "⇢" prefix

2	AM	BUY	MAKE	SELL	PM
Ⓢ	⇢ 7	−		+	=
⬡	⇢ 0	+	−		=
▣	⇢ 0	+	−		=
⚙	⇢ 0	+	−		=
▦	⇢ 0	+	−		=
🔊	⇢ 0		+	−	=
📻	⇢ 1		+	−	=
🕹	⇢ 0		+	−	=
↗	12	−	−	−	=

Note that ↗ is fixed back up to a high number, so you don't carry over your 3.

Later in the game, AM ↗ starts dwindling each turn — just like in real life, grinding is unsustainable and you naturally lose momentum.

END OF GAME

HOW TO WIN

The player with the most money at the end of the game *without Burning Out in the last turn* wins!

(Unused Parts and unsold Widgets count for nothing, only Money.)

Solo play is solitaire; try to beat your best score.

HOW TO LOSE

If you **Burnout** in the last turn, you are too physically and emotionally exhausted to go to a very important event the next day.

You were too preoccupied with money and lost sight of what really matters, so you lose.

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HARDWARE HUSTLE

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RULES

A pen-and-paper resource management game for one or more players about sustainably running a small hardware business.

SETUP

Each player will need:

- Hardware Hustle game sheet
- Six-sided die
- Calculator (optional)
- 20 minutes or so, depending on number of players

STARTING THE GAME

For games with multiple players, the highest die roller goes first, then proceed clockwise.

Fill out the "Name/Date" line in the top left, then familiarize yourself with the Actions Cost table.

BUY	+ ⬡	− ↗ 0	0	0	0	− Ⓢ 1
	+ ▣	− ↗ 1	0	0	0	− Ⓢ 2
	+ ⚙	− ↗ 2	1	0	0	− Ⓢ 3
	+ ▦	− ↗ 3	2	1	0	− Ⓢ 4
MAKE	+ 🔊	− ↗ 1	0	0	0	− ⬡ ▣
	+ 📻	− ↗ 2	1	0	0	− ⬡ ▣ ⚙
	+ 🕹	− ↗ 3	2	1	0	− ⬡ ▣ ⚙ ▦
SELL	− 🔊	− ↗ 2	1	0	0	+ Ⓢ 6
	− 📻	− ↗ 3	2	1	0	+ Ⓢ 18
	− 🕹	− ↗ 4	3	2	1	+ Ⓢ 40
PM	↗ < 0	**Burnout:** *Lose next turn*				
	↗ >= ⚄	**Research:** *Lower ↗ cost*				

Its icons represent:

- Parts
  - ⬡: Fastener
  - ▣: Enclosure
  - ⚙: Controls
  - ▦: Integrated Circuit
- Widgets
  - 🔊: Amplifier
  - 📻: Boombox
  - 🕹: Game
- Ⓢ: Money
- ↗: Opportunity
- ⚄: Dice roll

TAKING A TURN

You can think of a turn like a typical workday: you wake up in the AM, do some stuff (Actions), and then rest in the PM. Ideally, the day's actions get you further towards your goal, which is, unfortunately, to make enough money to continue making money.

The turn's day is like a little spreadsheet. Its rows are grouped into Money, Parts, Widgets, and Opportunity. Its columns are Actions to be filled out from left to right.

Let's walk through an example:

1. AM

Your first day on the job starts with Ⓢ 10 and ↗ 12 but everything else is 0.

1	AM	BUY	MAKE	SELL	PM
Ⓢ	10	−		+	=
⬡	0	+	−		=
▣	0	+	−		=
⚙	0	+	−		=
▦	0	+	−		=
🔊	0		+	−	=
📻	0		+	−	=
🕹	0		+	−	=
↗	12	−	−	−	=

There's nothing else to do here right now besides note what you've got... which, for now, isn't much!

2. BUY

Let's buy some Parts.

Parts cost Opportunity (↗) and Money ($), as shown in the Actions Cost table.

BUY

+ ⬡ – ↗	**0**	0	0	0	– $1
+ 📦 – ↗	**1**	0	0	0	– $2
+ 🎚 – ↗	**2**	1	0	0	– $3
+ 🔲 – ↗	**3**	2	1	0	– $4

The ↗ cost for each Part is a row of values, but, for now, we'll only use the one in the column with the dark outline: 0, 1, 2, 3.

Roll for ↗: Roll a die. Its value is the maximum you can spend on Opportunity for this particular Action. (Think of Opportunity as a combination of time/effort you *spend* plus luck/goodwill you *receive*, all in one value.) Anyway, we'll say you rolled 5.

With $10 and ↗12, you decide to buy ⬡2, 📦2, and 🎚1. The math for that looks like:

$1×⬡2 + $2×📦2 + $3×🎚1 = $9
↗0×⬡2 + ↗1×📦2 + ↗2×🎚1 = ↗4

In the Buy column, you mark down the new values for the parts you bought and their total ↗/$ costs:

1	AM	BUY	MAKE	SELL	PM
$	10	– 9		+	=
⬡	0	+ 2	–		=
📦	0	+ 2	–		=
🎚	0	+ 1	–		=
🔲	0	+ 0	–		=
🕹	0		+	–	=
📻	0		+	–	=
🕹	0		+	–	=
↗	12	– 4	–	–	=

A couple things to call out:

- Cells are marked by their mathematical operation. We're spending $ and ↗, so those cells have a "**-**". We're gaining Parts, so those cells have a "**+**".
- Unused cells have a gray background so we know to skip them for this Action.
- Cells with no change (like the 🔲 in our example) can be filled with 0 or left blank.
- We rolled 5 for Opportunity but only spent 4. That's okay. Mark down what you spent, not rolled. You cannot spend more Opportunity than you roll.
- Similarly, you cannot spend more Money than you have.

3. MAKE

Now we'll make Widgets from Parts, which costs Opportunity and Parts.

MAKE

+ 🕹 – ↗	**1**	0	0	0	– ⬡📦
+ 📻 – ↗	**2**	1	0	0	– ⬡📦🎚
+ 🕹 – ↗	**3**	2	1	0	– ⬡📦🎚🔲

Roll for ↗. Call it 4.

You decide to make 🕹1 and 📻1, the math for which looks like:

🕹1x⬡1 + 📻1x⬡1 = 2⬡
🕹1x📦1 + 📻1x📦1 = 2📦
📻1x🎚1 = 1🎚

🕹1x↗1 + 📻1x↗2 = 3↗

(Total ↗ cost is 3, which is within the 4 you rolled. There's no $ cost because you already bought the parts you're using.)

1	AM	BUY	MAKE	SELL	PM
$	10	– 9		+	=
⬡	0	+ 2	– 2		=
📦	0	+ 2	– 2		=
🎚	0	+ 1	– 1		=
🔲	0	+ 0	– 0		=
🕹	0		+ 1	–	=
📻	0		+ 1	–	=
🕹	0		+ 0	–	=
↗	12	– 4	– 3	–	=

4. SELL

The last Action of our turn is to Sell Widgets, consuming Opportunity and gaining Money.

SELL

– 🕹 – ↗	**2**	1	0	0	+ $6
– 📻 – ↗	**3**	2	1	0	+ $18
– 🕹 – ↗	**4**	3	2	1	+ $40

Roll for ↗. We'll say it's 3.

🕹1x$6 = $6
🕹1x↗2 = ↗2

Our ↗ roll wasn't enough to sell both of the Widgets we made, so we could only sell the 🕹. You can Buy/Sell/Make as much as you want but only within what you roll/have.

1	AM	BUY	MAKE	SELL	PM
$	10	– 9		+ 6	=
⬡	0	+ 2	– 2		=
📦	0	+ 2	– 2		=
🎚	0	+ 1	– 1		=
🔲	0	+ 0	– 0		=
🕹	0		+ 1	– 1	=
📻	0		+ 1	– 0	=
🕹	0		+ 0	– 0	=
↗	12	– 4	– 3	– 2	=

When you sell a Widget, you lose it from your inventory.

5. PM

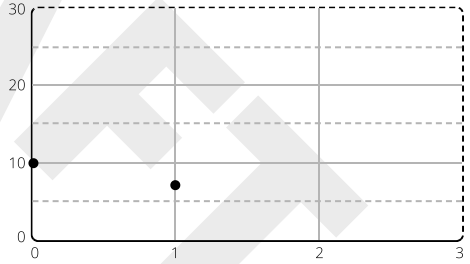
Tally up your Actions' math and end your turn in the PM column.

1	AM	BUY	MAKE	SELL	PM
$	10	– 9		+ 6	= 7
⬡	0	+ 2	– 2		= 0
📦	0	+ 2	– 2		= 0
🎚	0	+ 1	– 1		= 0
🔲	0	+ 0	– 0		= 0
🕹	0		+ 1	– 1	= 0
📻	0		+ 1	– 0	= 1
🕹	0		+ 0	– 0	= 0
↗	12	– 4	– 3	– 2	= 3

But your turn isn't done yet! Let's chart our Money and see if we can do anything with our leftover Opportunity.

MONEY

Your turn ends with $7, and you plot it in the Money chart on the left of the game sheet.



A productive day, sure, but not super profitable...

OPPORTUNITY

As for ↗, there are two possibilities:

- If you exhaust yourself and go negative, you suffer **Burnout** and lose the entire next turn! In this example, you have ↗3 so are safe.
- Otherwise, **Roll for Research**. Its value is the ↗ cost to research getting better at *one* of the three actions: Buying, Making, or Selling.

RESEARCH