

Bonus-2

Smartphone

Objects Before Apps



Smartphone

Objects Before Apps



Before Smartphone Applications,
there are separate objects.
For easier translations for the
international versions, present tense
verbs are used throughout this book.



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Smartphone Objects Before Apps

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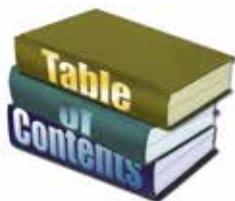


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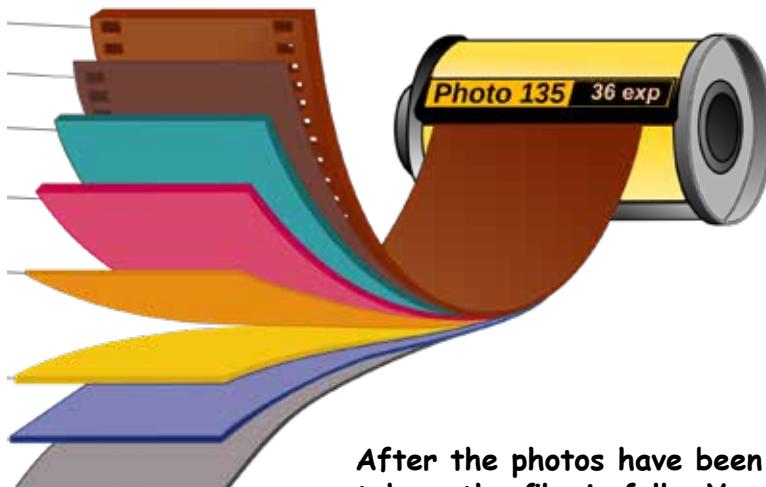
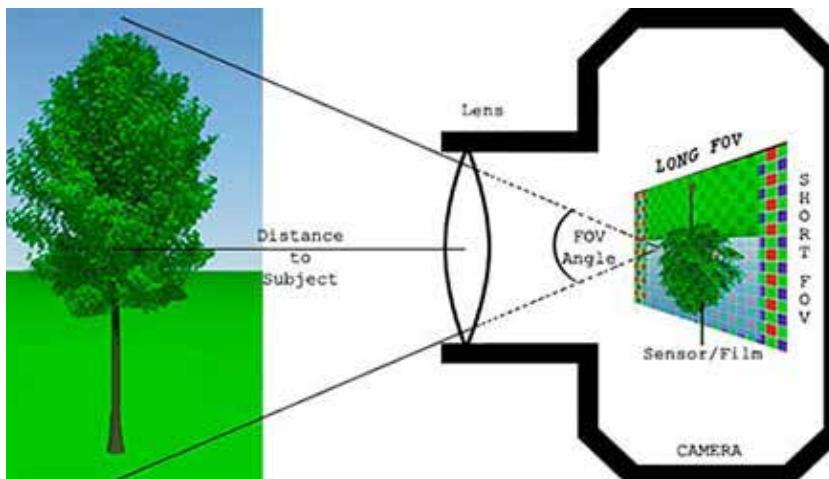


Camera

Before the Photo Apps, there are cameras.



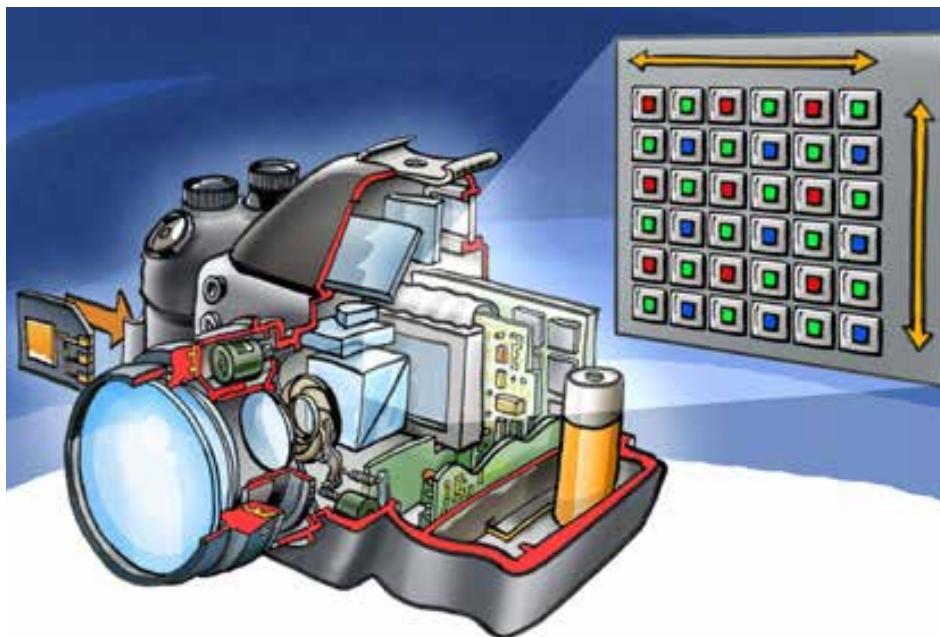
A camera lens focuses light onto film.
The film can only take up to 36 pictures
before more film is needed.



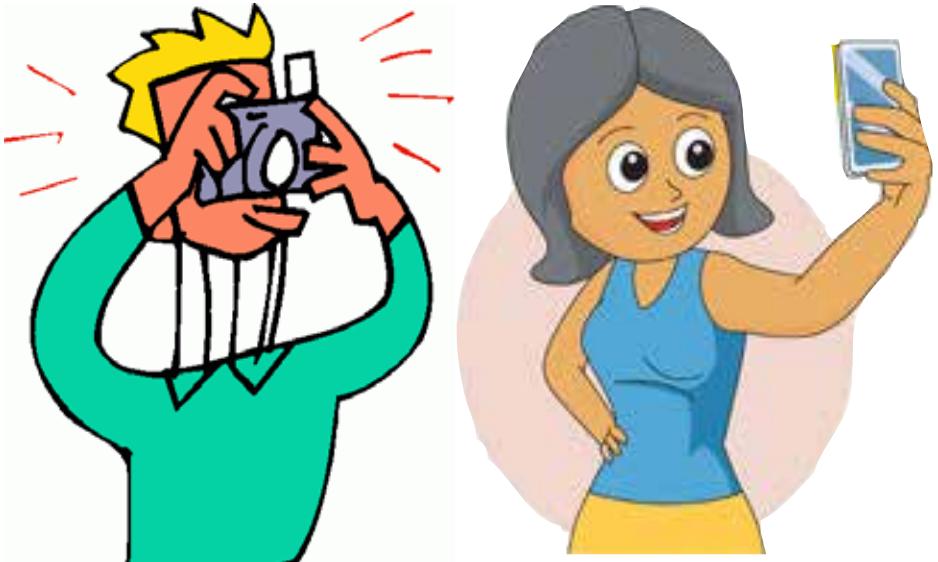
The film is taken to a special store.
The pictures are developed onto photo
paper. The photos are stored in albums.



Next, digital cameras are invented. Lenses shine light onto special sensors instead of film. Sensors turn pictures into patterns of electricity that are saved as pictures.



Today, we do not need a separate camera. We take pictures with Photo Apps on our smartphones.



Smartphone cameras enable the selfie pictures.

There are even Photo Apps to remove red eyes and wrinkles from the digital pictures.

Inside the smartphone, tiny lenses focus light onto a sensor. Software turns the picture into digital patterns. Photos are stored in the phone's memory.



Digital photos can be shared instantly with smartphones.

The challenge is storing and organizing so many on-line pictures.

Also, separate cameras still take the best quality pictures.



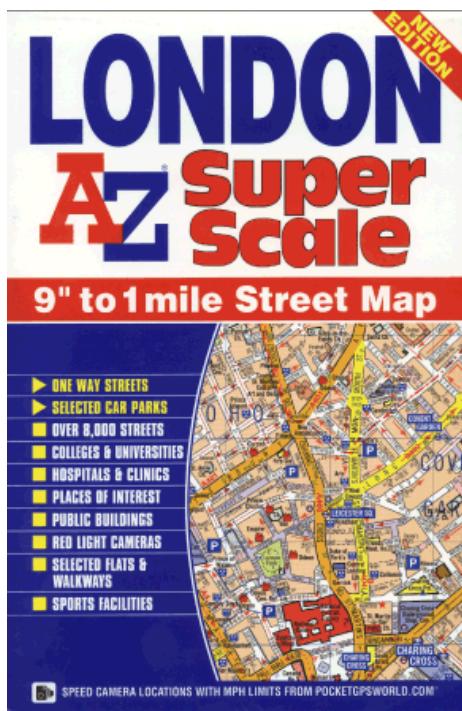
We need maps to help us find the places to take pictures of.

Printed Maps and Apps

Before smartphone Map Apps like Google Maps and Apple Maps, there are hard copies of printed maps.



The printed maps are only good for one place. That is, when we go to other places, we have to buy new maps.



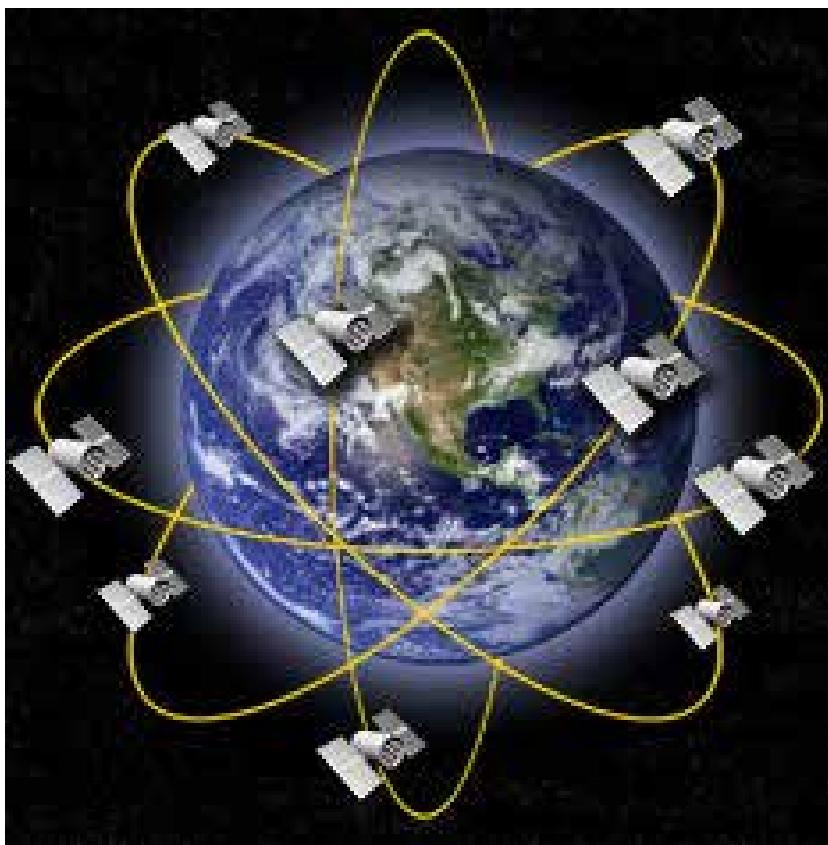
Today, we don't need separate paper maps. We get our directions from Map Apps.



Map Apps even reroute us when we get lost.



Today, Global Position Satellites, called GPS, send out signals to our Smartphones. The smartphone knows its location. Next, the phone talks with the maps database to plan our trips.



This is an interesting example of the power of on-line maps. At first, Google Maps made a mistake. It said that a piece of Costa Rica was part of Nicaragua. In 2010, the Nicaraguan Military seized the land. Later, they withdrew. Google has since corrected the on-line map error. It is amazing how well on-line maps do with helping us with directions.



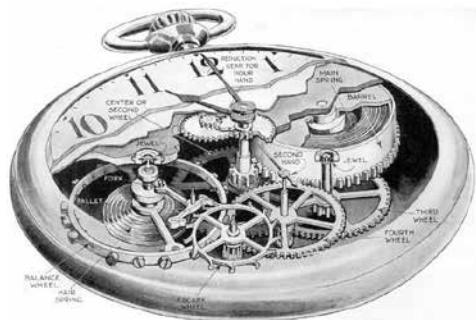
When we travel, we need to know what time it is.

Clocks & Calendars

Before the Time Apps, there are separate clocks, alarm clocks, watches and calendars.



In the past, clock springs and gears turn hands to keep time. Bells ring to wake us up. Later, alarm clocks are electric. Today, smartphone sensors and software make clocks. They can even display time and weather at home around the world via the internet.



A calendar is a list of days, months and years. In the past, calendars are only printed on paper. On-line schedules and calendar apps are much easier to use.



Today, we don't need separate clocks and calendars. Time Apps tell us the time and date and wake us up too.



They also tell us the time in places around the world.

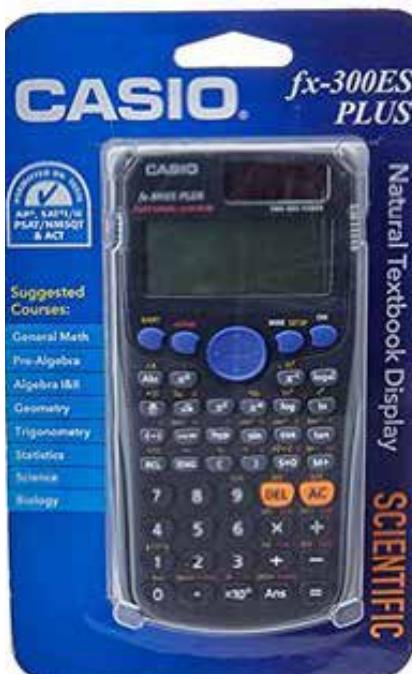
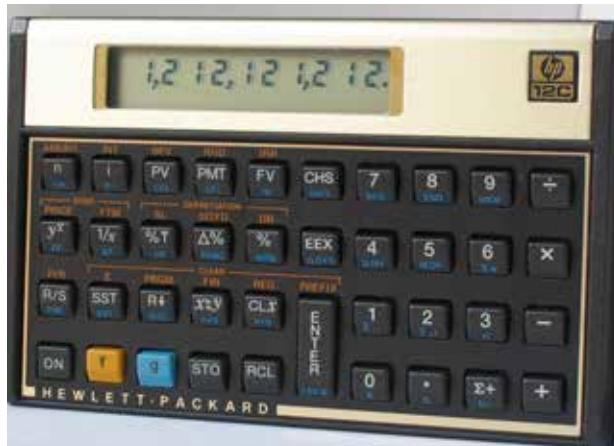
Somehow with all this time at our fingertips, we are still late for meetings. Often, in meetings or shopping we need to do math.

Calculator

Before the Math Apps,
there are handheld calculators.

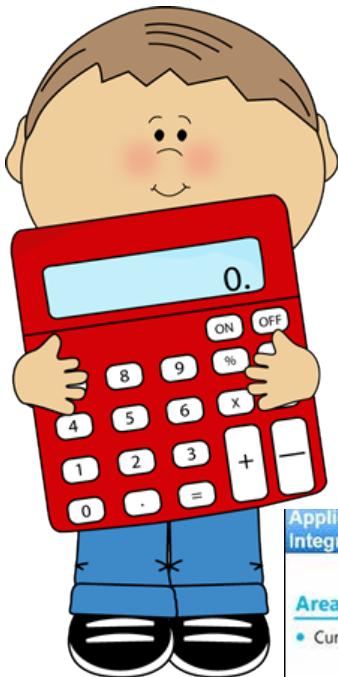


Different calculators do different tasks. For example, there are separate calculators for accountants, engineers and scientists.



Today, we do not need separate calculators. Smartphones come with simple calculators.

There are also additional Math Apps for higher math and more functions.



Applications of Integration

Area under Curve

- Curves which are entirely above x-axis

$$\text{Area} = \int_a^b f(x).dx$$

In this case, we find the area by simply finding the integral:

$$\int_a^b$$

More Apps



Math Apps help but the human still has to do the thinking.

While we do math, we can listen to music.

Music

Before the Music Apps, there are round LP records and later compact disks (CD).



Songs are stored as record grooves and CD micro peaks.

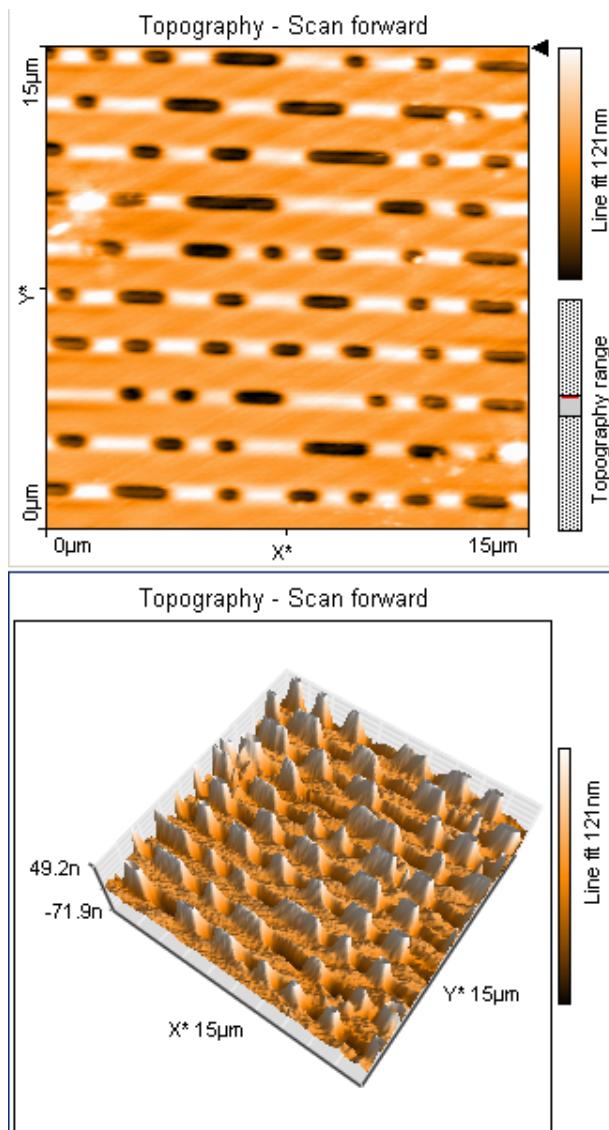
Records and CDs have their own separate players.



Grooves on the LP record,
wiggle needles. This shakes
the speaker to make sounds.



Under a microscope, you can see that CD's have peaks and valleys called pits. The peaks bounce the laser light. The digital light patterns are changed into electricity in a sensor and then into sound in the speaker.



Records and CDs can only play a few songs. It is amazing that Music Apps can play thousands of songs.



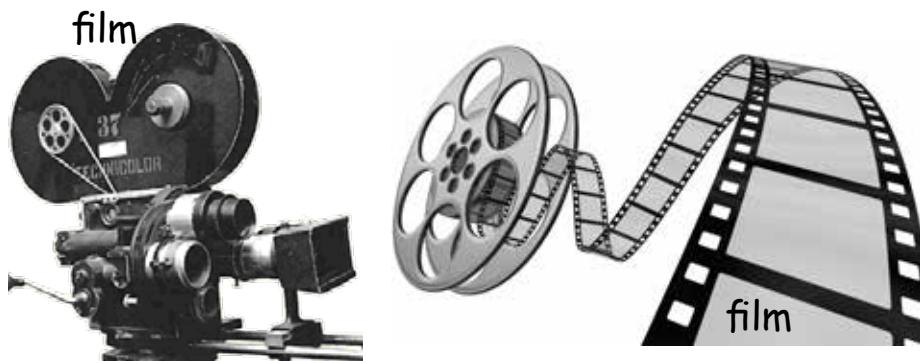
Listening is nice but we want to hear and see videos.

Video

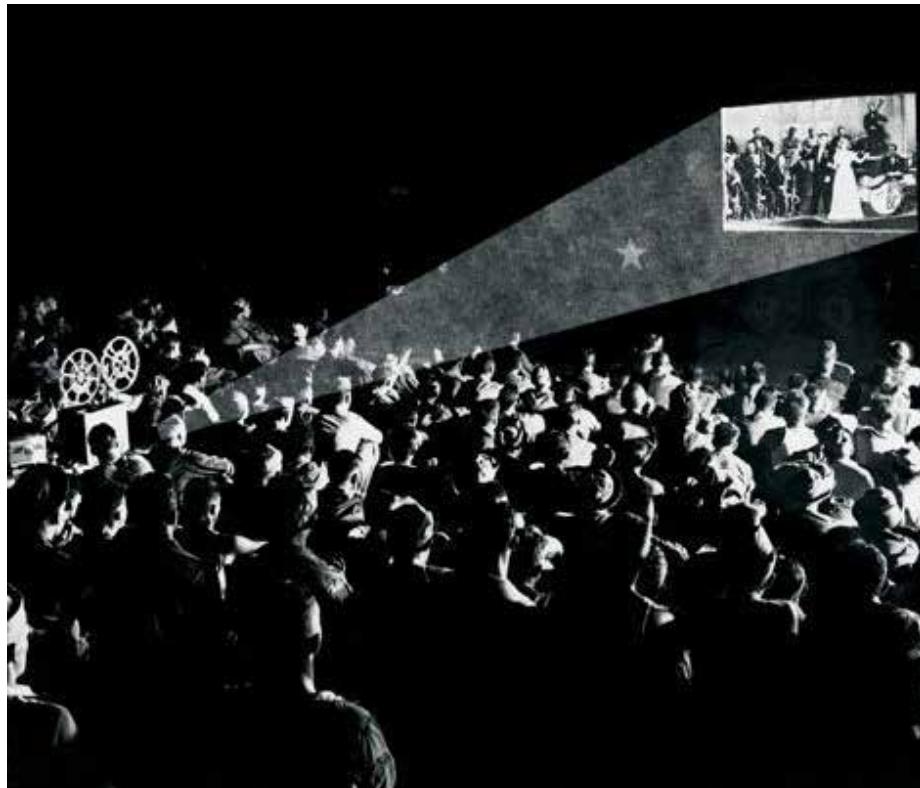
Before the Video Apps, there
are movie cameras and projectors.



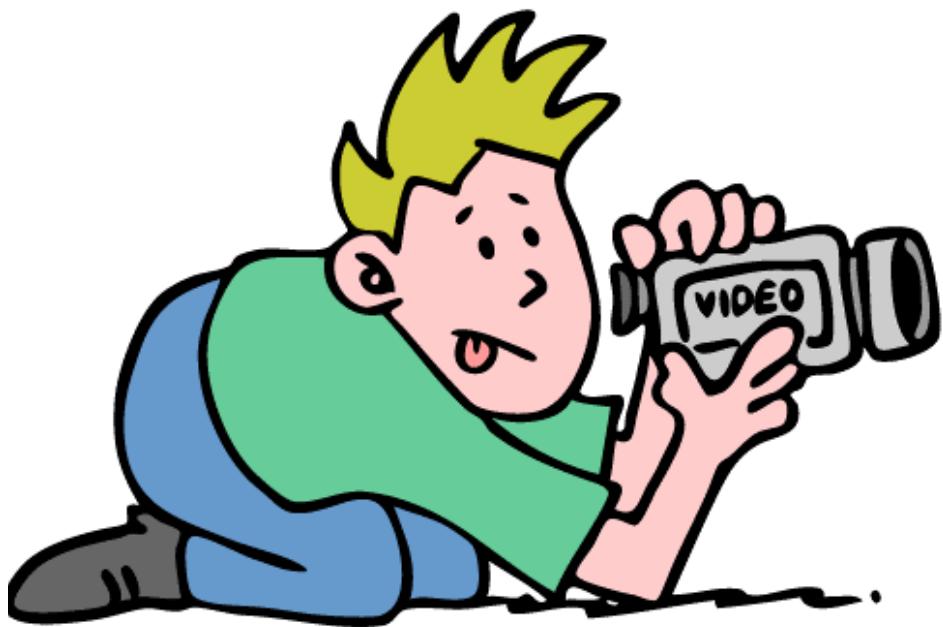
To record action, movie cameras take over 20 pictures a second. The first movie cameras use film. Next, video cameras record onto magnetic tape.



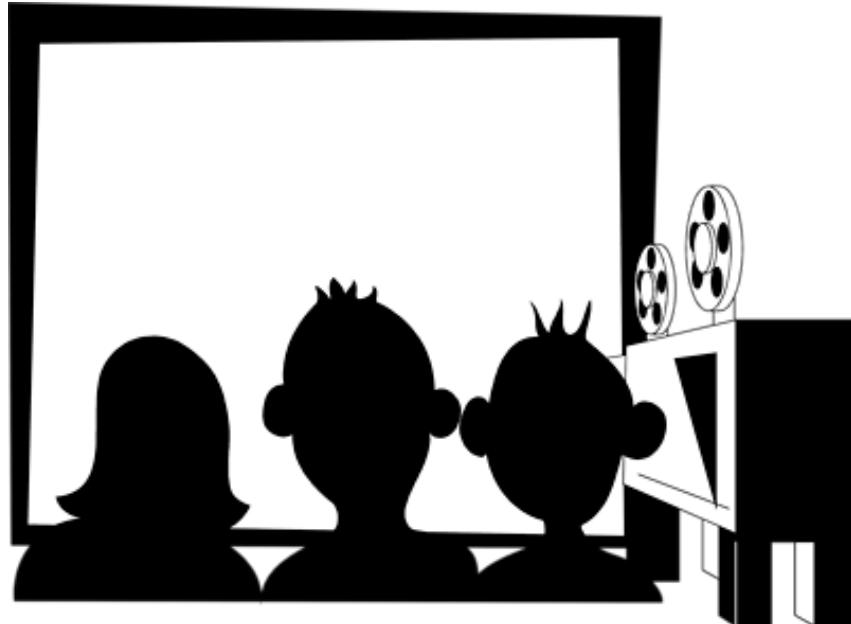
**At a theater, movie projectors use
bright lights to shine through the film.
The movie is shown onto a huge screen.
Popcorn, candy and snacks are expensive.**



Later, videos are stored on VHS tapes and then next onto DVD's.



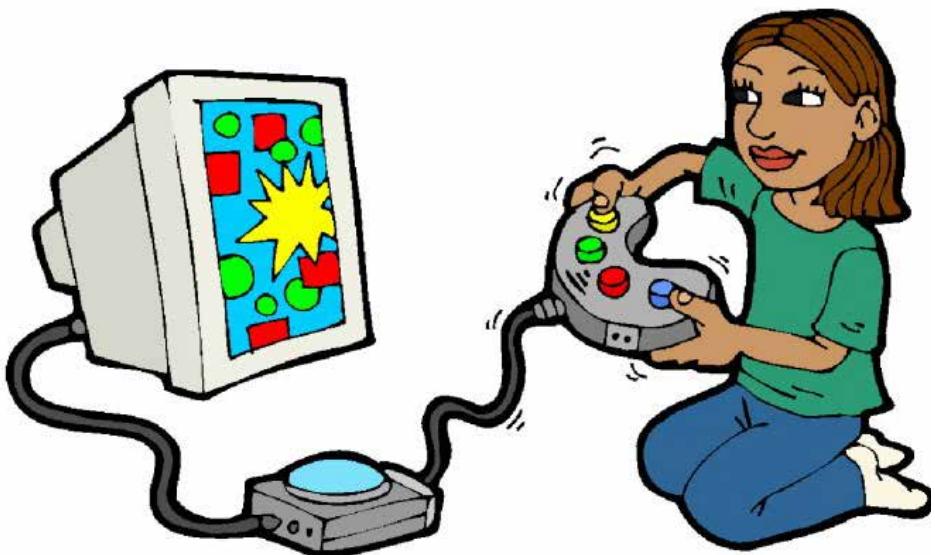
It is amazing that movies have gone from theaters to personal TVs and smartphones.



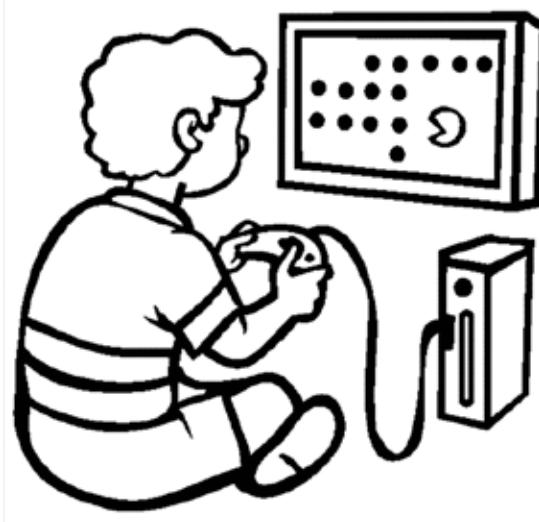
More than just watching videos, people want to play games.

Video Games

Before the Game Apps,
there are arcades and then
home TV consoles and controls.



In 1980's, video games are played by paying quarter coins into machines at arcades. Next, video gaming systems hook-up to the home TV.



**Now days, downloaded software
Game Apps and smartphone sensors
explode the use of video games.**



Zombies, ninjas, fighters, soldiers, adventurers, racers, sports players are all examples of video games available on smartphones.



The ease of access to games on smartphones contributes to concern about video game addiction.



Video games also connect players via the Internet.

Often, we just want to send short notes to someone.

Text and e-mail

Before Text and e-Mail Apps, people write letters by hand with pen and paper.



It costs money to mail the letters.
Hand mailed letters are called snail-mail
because they take days to deliver.



It is amazing to go from hand written letters to on-line texts and e-mails.



**But, just like snail-mail,
e-mail gets lots of junk
mails and adverts.**



**Today, we text and e-mail instantly
with others around the world.**

**The challenge is that sometimes, we
hit the send button before thinking
through what we are saying - oops!
There is no "un-do" for on-line e-mail.**



**Sometimes, we search the Internet for
something interesting to share in our e-mails.**

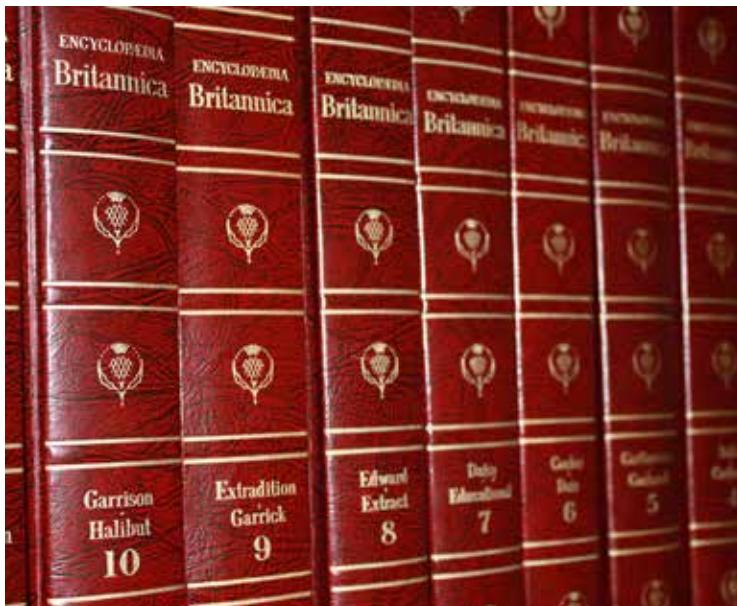
Internet Searches

Before Internet searches, people with access, research at libraries.



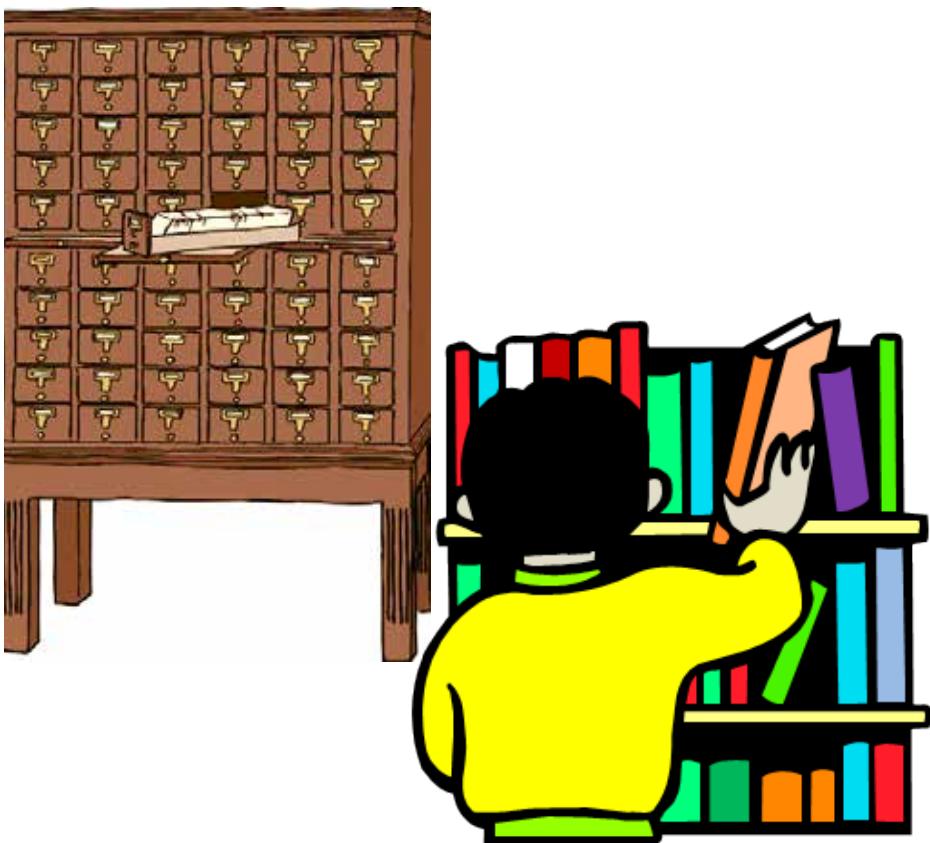
Books are stored on shelves at public libraries.

Library searches include looking up topics in special books called encyclopedias.



Drawers of catalog cards are searched by hand to find books on subjects of interest.

The books are stored on rows after rows of shelves. Each book has a special number called Dewey Decimal code to help us find the right book. There is a lot of running around to get all the books we need.



In the past, there are several attempts to store the world's data. Only a few people can access this data.

Today, the world-wide-web links humanities knowledge. Free access connects humans and kindles the hopeful quest for world peace.



International Institute of Bibliography



It is amazing to go from limited shelves of library books to hand-held on-line Internet searches.



Today, we have a world of information at our finger tips. We just have to show interest, ask questions and search the internet. With access to so much information, it is easy to get overwhelmed by the mountains of data.

The challenge is to stay focused on one basic question at a time. Summarize the answer without drowning

in the sea of on-line data. Often, we are over-entertained at the expense of being informed.



Sometimes, we just want to call someone.

Cell Phone

Before cell phones,
there are telephones that are
locked in place with land-lines.



Back then, home and work have land-line phones. When you want to make a call at places in between, you have to find a pay phone. Many people today cannot remember a time before cell phones. They cannot image the amount of inconvenience by not having a portable cell phone.



Everywhere we use our cell phones, there are towers and base stations. Cell phones use radio waves to talk with tower antennas. The base stations connect to land-lines.



Global tower stations and telephone lines connect cell phones.

All this happens so fast that we can talk with others around the world without delay.



Wow! Today, smartphones sure can do a lot!

In the past, these are all separate objects.



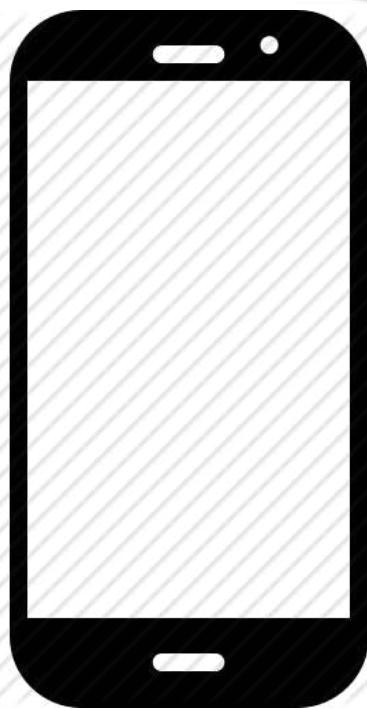
letter



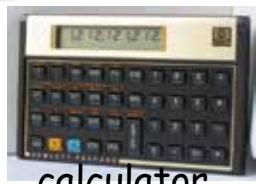
phone



camera



map



calculator



music



clock



video
games

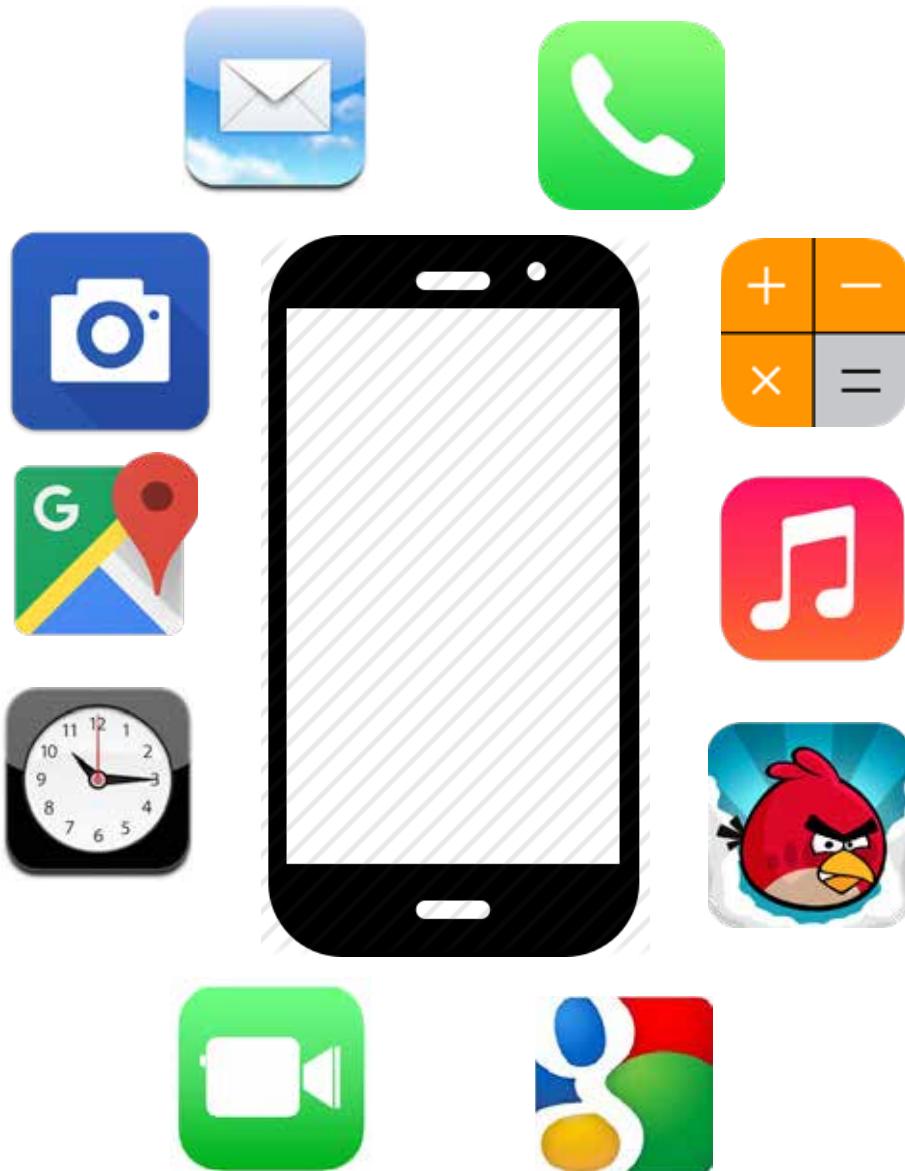


movie camera



library books

Smartphones replace all these objects with software apps and sensors.



Long ago, people searched for a magic stone that would change anything into gold. Today, smartphones “magically” change separate objects into Apps. Data is the new gold rush!



1849, panning for gold

Conclusion

Smartphones offer us a world of golden opportunities to realize our own creativity with on-line tools and global connectivity.



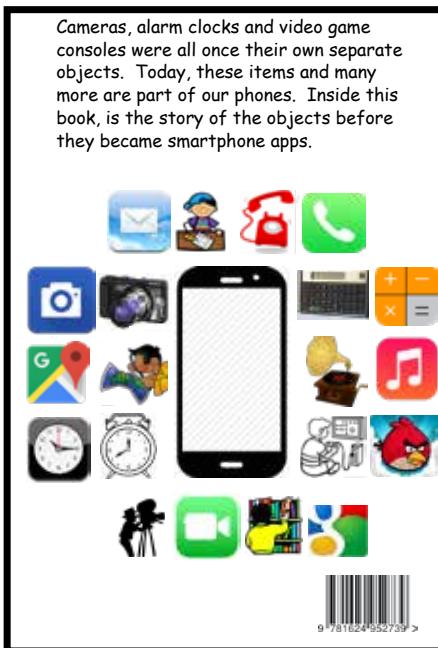
Bonus 2

Video

Smartphone Objects Before Apps



Cameras, alarm clocks and video game consoles were all once their own separate objects. Today, these items and many more are part of our phones. Inside this book, is the story of the objects before they became smartphone apps.



When we see the origins of our everyday objects, we better understand technology. We can adapt and thrive to the many tech changes in our lives.

In the past, there were separate objects for what our smartphone can do today.

Smartphones - 7 Objects Before Apps - Video Script

- i-1) Welcome to Smartphones*
- i-2) Seven Objects Before They're Apps*
- i-3) May SMART phones lead to SMARTER people!*
- 1-1) At first, cameras use film.*
- 1-2) Next, inside digital cameras...*
- 1-3) Light shines on a sensor to capture pictures.*
- 1-4) Today, Photo Apps use tiny sensors*
- 1-5) to take digital pictures too!*
- 1-6) We've gone from separate cameras*
- 1-7) to selfies.*
- 2-1) At first, maps are printed on paper.*
- 2-2) New places, need new maps*
 - for us to find directions.*
- 2-3) Next, global satellites, GPS*
- 2-4) Send location and time signals*
 - to separate receivers.*
- 2-5) Today, Map Apps use GPS, tiny sensors*
 - and software for us to find directions.*
- 2-6) We've gone from paper maps*
- 2-7) to easily finding new places.*
- 3-1) At first, "Groovy" records make music.*
- 3-2) Later, records are replaced by CDs.*
- 3-3) In a CD Player; light becomes*
 - on or off patterns...*
- 3-4) that turns into sounds in the speakers.*
- 3-5) Today, Music Apps use songs,*
 - stored as digital memory*
- 3-6) to make new music.*
- 3-7) We've gone from separate records*
 - and CDs to playing and recording*
 - smartphone sounds.*





- 4-1) At first, movie cameras use film
- 4-2) Next, video cameras use tape.
- 4-3) Then, digital video cameras
 - use sensors and memory
- 4-4) to record video.
- 4-5) Video cameras take
 - over 20 still pictures a second.
- 4-6) Today, Video Apps use
- 4-7) the camera for pictures
- 4-8) and microphone for sound.
- 4-9) software keeps pictures and sounds in sync
- 4-10) We've gone from separate movie cameras
- 4-11) to smartphone that records and plays video.
- 4-12) We also play video games
- 4-13) with More sensors and action-filled software.
- 5-1) At first, letters are written by hand.
- 5-2) Next, typewriters type letters.
- 5-3) We pay to mail letters by post.
- 5-4) It takes days or weeks for letters to be delivered.
- 5-5) Today, email Apps use touchscreen and software
- 5-6) to write texts and emails.
- 5-7) We've gone from slow letters
- 5-8) to instant emails delivered worldwide.
- 6-1) At first, library books are used
 - to search for subjects.
- 6-2) Can you imagine
- 6-3) drive to the library
- 6-4) Search card decks
- 6-5) to find books
- 6-7) to search for data? Lots of work
 - for little information.
- 6-8) Today, Search Apps quickly connect to
 - the global internet that seems endless.
- 6-9) We search the world's knowledge at our fingertips.
- 6-10) We've gone from separate books
- 6-11) to worldwide web searches. Wow!
- 6-12) Just one more ...

- 7-1) At first, telephones are
land-locked in one place.
- 7-2) Next, cell phones make
calls on the move.
- 7-3) Cell phones use radio waves
- 7-4) to connect to global tower
networks and telephone lines.
- 7-5) Today, Phone Apps, change
sounds into radio waves
- 7-6) to make worldwide phone calls.
- 7-7) Wifi and Blue Tooth
use radio waves too.
- 7-8) We've gone from separate phones
to connected smartphones. Now to the end.
- C-1) (smartphone ringtones) Hello!
Yes, It once took all of these,
- C-2) to do what my
smartphone can do today.
- C-3) I take pictures;
- C-4) find directions;
- C-5) listen to music;
- C-6) take and play videos
- C-7) send e-mails
- C-8) search the internet;
- C-9) and of course! Make phone calls
- C-10) All, with my handheld smartphone.
- C-11) Ok then.
Thanks for the call. Bye! Bye!



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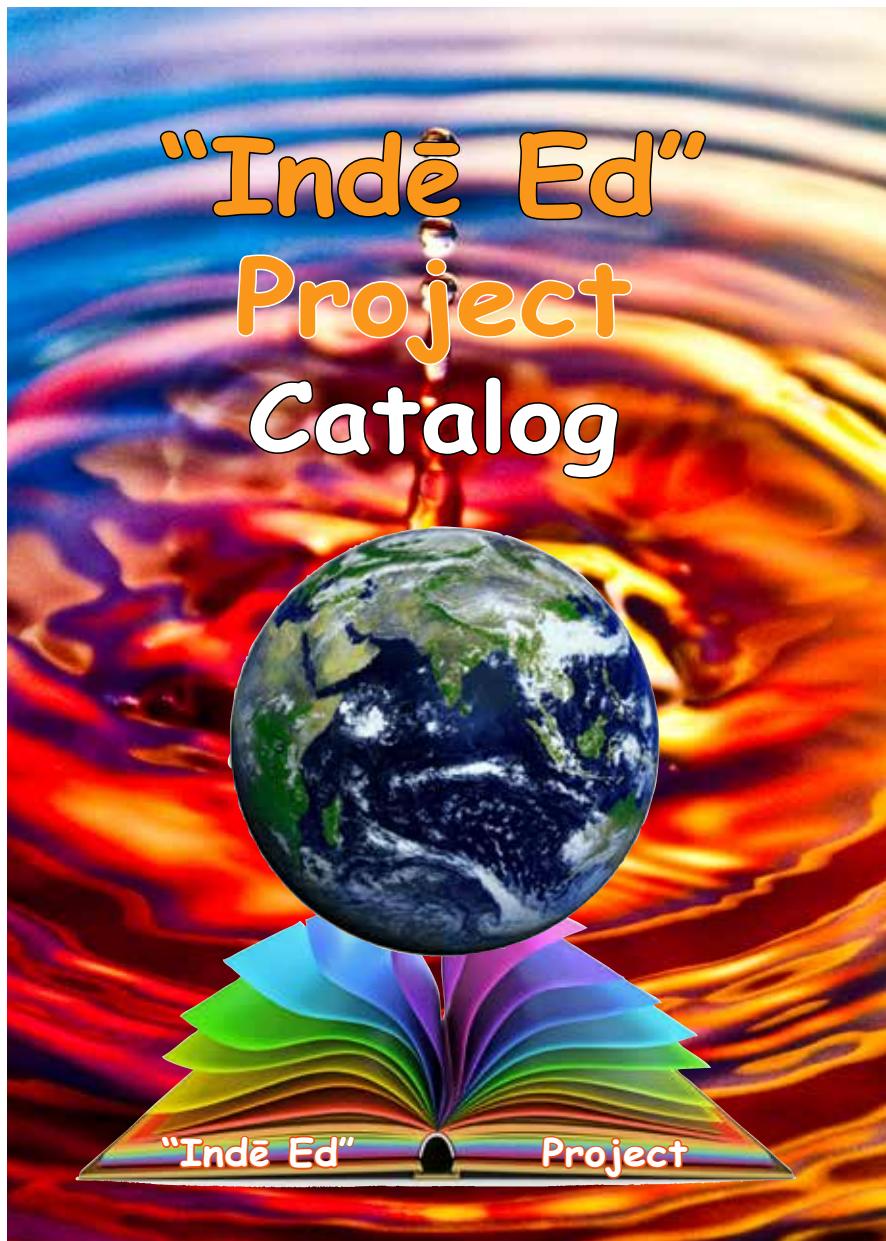
Page 41 Library by Parenting Patch on Wikipedia

Page 45 Cell phone tower by cacophony

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Back Cover

Smartphone

Objects Before Apps

Cameras, alarm clocks and video game consoles were all once their own separate objects. Today, these items and many more are part of our phones. Inside this book, is the story of the objects before they become smartphone apps.

