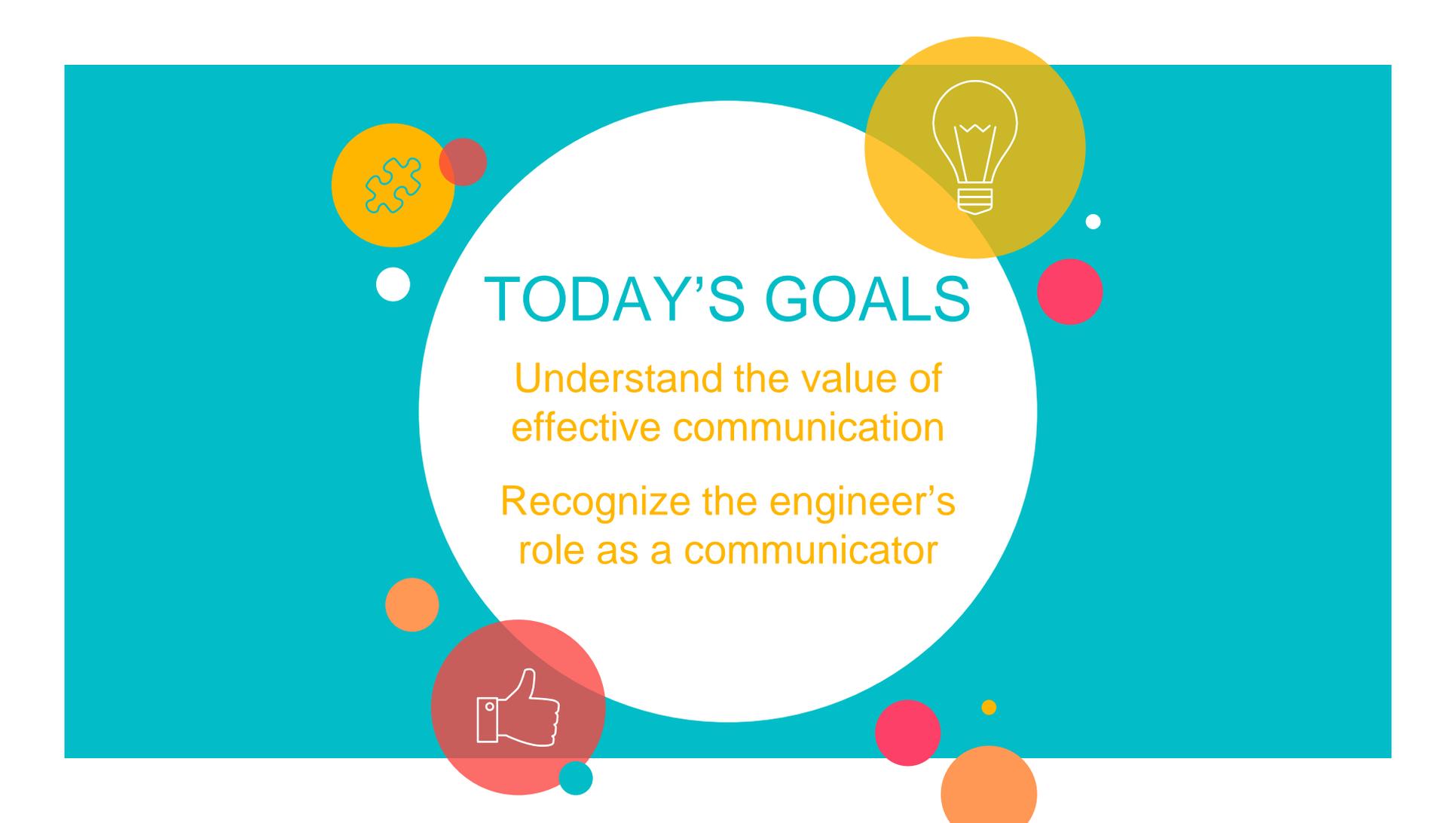




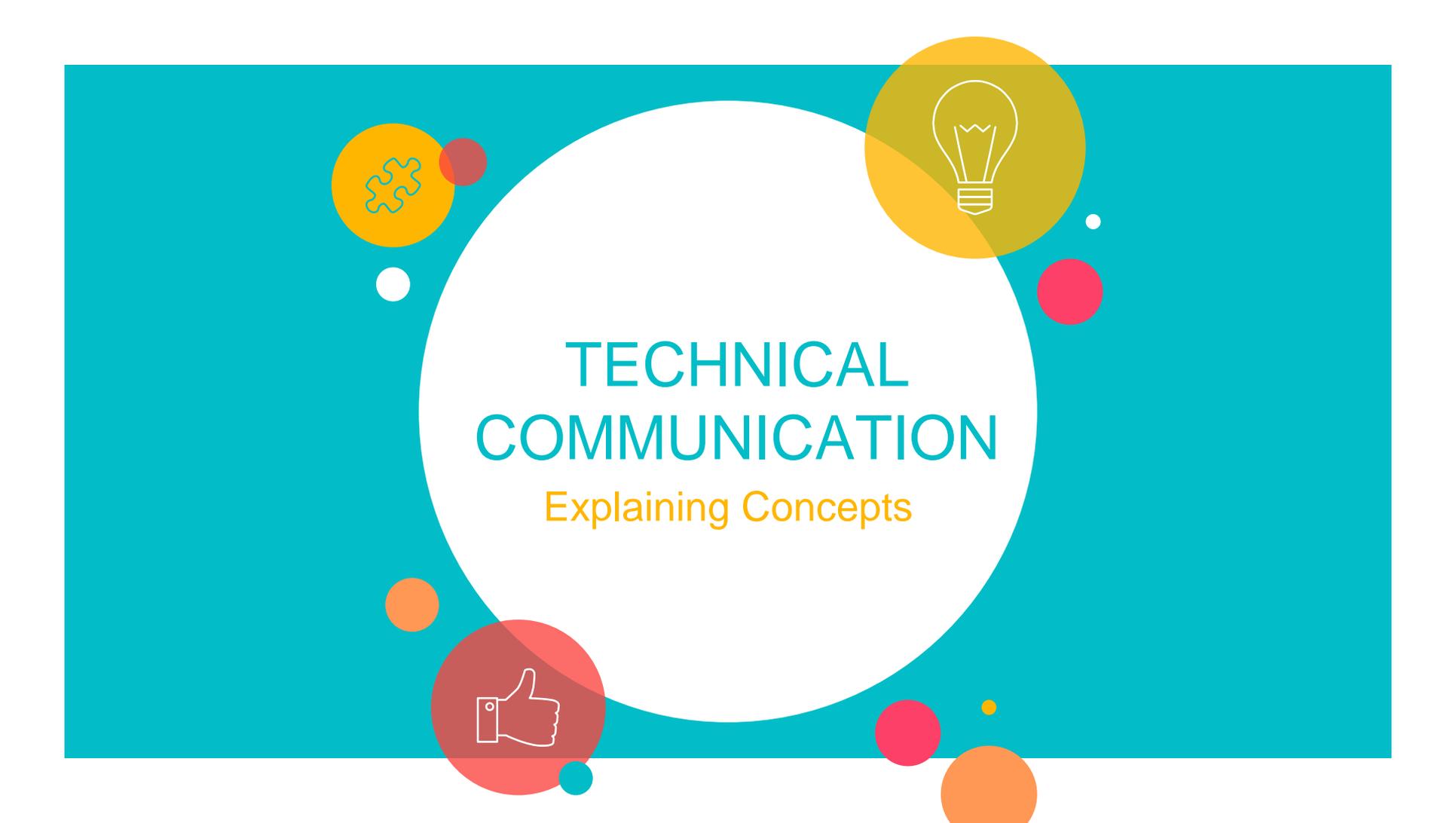
Technical Communication



TODAY'S GOALS

Understand the value of effective communication

Recognize the engineer's role as a communicator



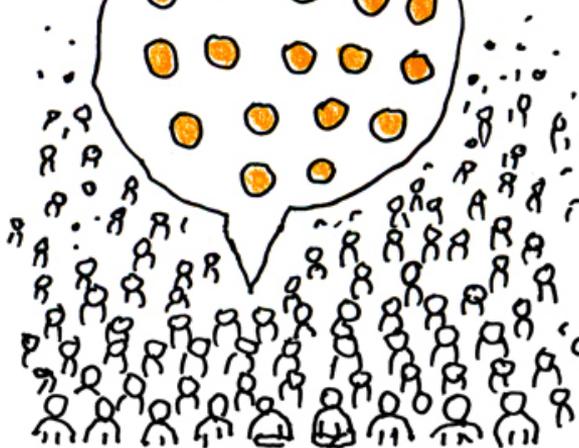
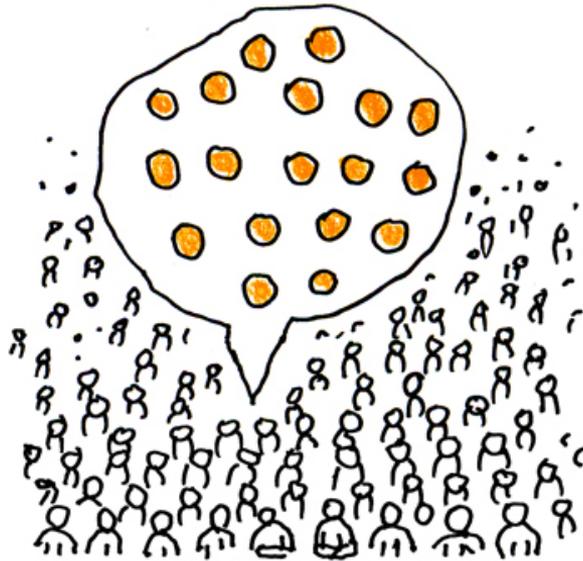
TECHNICAL COMMUNICATION

Explaining Concepts

Science communication



scientists



the public



Be Concise

Be Clear

Be Engaging

EFFECTIVE
TECHNICAL
COMMUNICATION



It's easy to
remember
things in
3's



is a magic number!



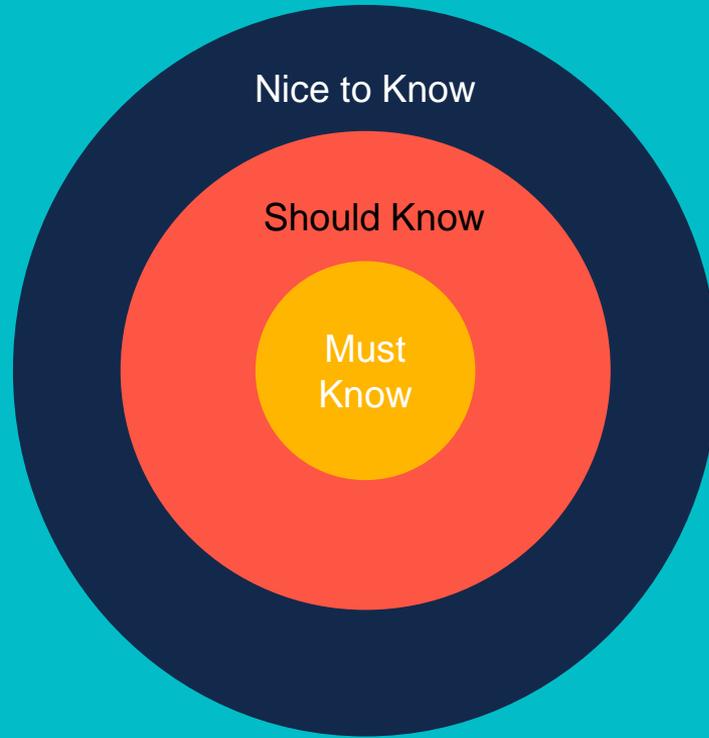


Task 1:
Identify the
science that the
audience should
know

START WITH THE
WHAT
WHY
HOW



Keep It Focused





Task 2:
Determine what
people know





FACIAL
EXPRESSIONS

GET CUES FROM YOUR AUDIENCE



From the American sitcom The Office

BODY
LANGUAGE

GET CUES FROM YOUR AUDIENCE





Communication Activity 2

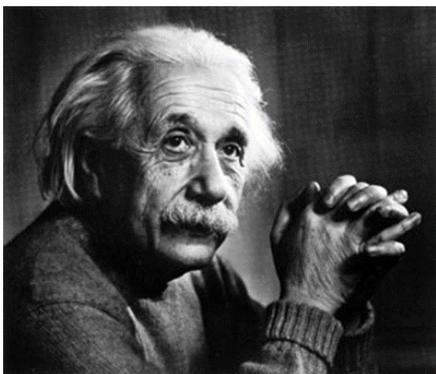




Task 3:
Fill them in on
the gaps/the
details

UNPACK THE SCIENCE



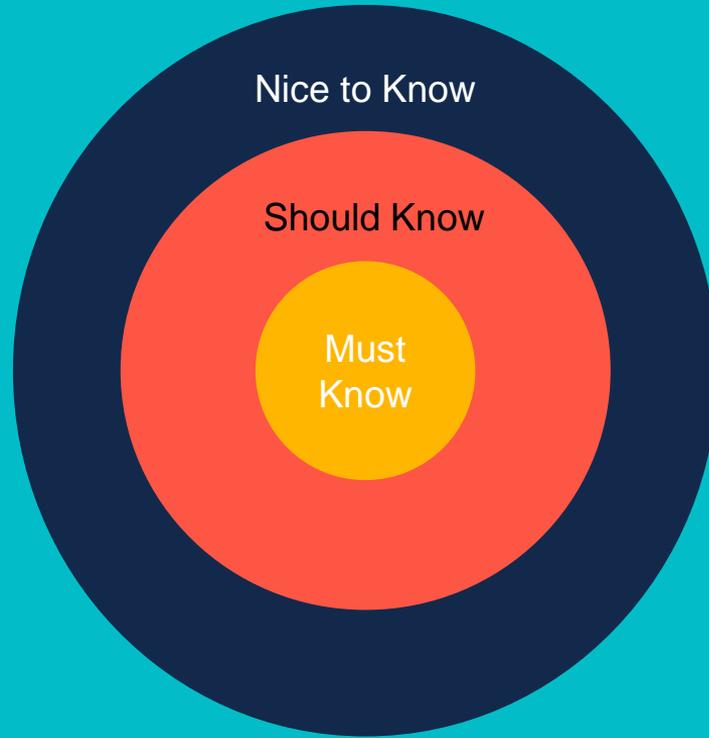


Most of the fundamental ideas of science are essentially simple, and may, as a rule, be expressed in a language comprehensible to everyone.

- Albert Einstein



Keep It Focused





*If you don't know what it is,
there is no way you can explain it to others.*

- Prof. Kristin Sainani, Stanford University

Writing for the Lay Public: Engaging and Educating the General Population





Excerpt from an abstract in *Nature* 547, p. 336

“...Here we leverage the wide usage of smartphones with built-in accelerometry to measure physical activity at the global scale. We study a dataset consisting of 68 million days of physical activity for 717,527 people, giving us a window into activity in 111 countries across the globe. We find inequality in how activity is distributed within countries and that this inequality is a better predictor of obesity prevalence in the population than average activity volume.”





Original Summary

“...Here we leverage the wide usage of smartphones with built-in accelerometry to measure physical activity at the global scale. We study a dataset consisting of 68 million days of physical activity for 717,527 people, giving us a window into activity in 111 countries across the globe. We find inequality in how activity is distributed within countries and that this inequality is a better predictor of obesity prevalence in the population than average activity volume.”

Simplified Summary

Researchers used data from smartphones to look at the walking habits of 717,527 people from 111 countries. Countries with the widest gaps between the most active and least active people also had the highest obesity rates. Surprisingly, this “activity inequality” was a stronger predictor of obesity than the total amount of activity.

Source: Sainani (2017)





Original Summary

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Source: Sainani (2017)





Be Concise

Be Clear

Be Engaging





STOP

Rushing

Jargoning

LOOK

For
Connections

For
Opportunities

LISTEN

To Questions

To Feedback





WHAT DO ENGINEERS DO?





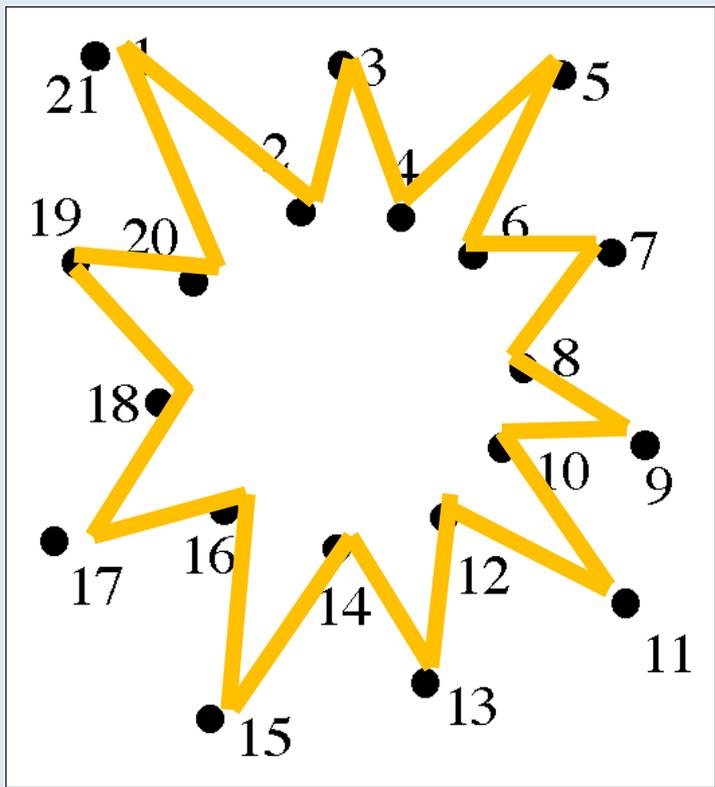
Finish with the curiosity statement.

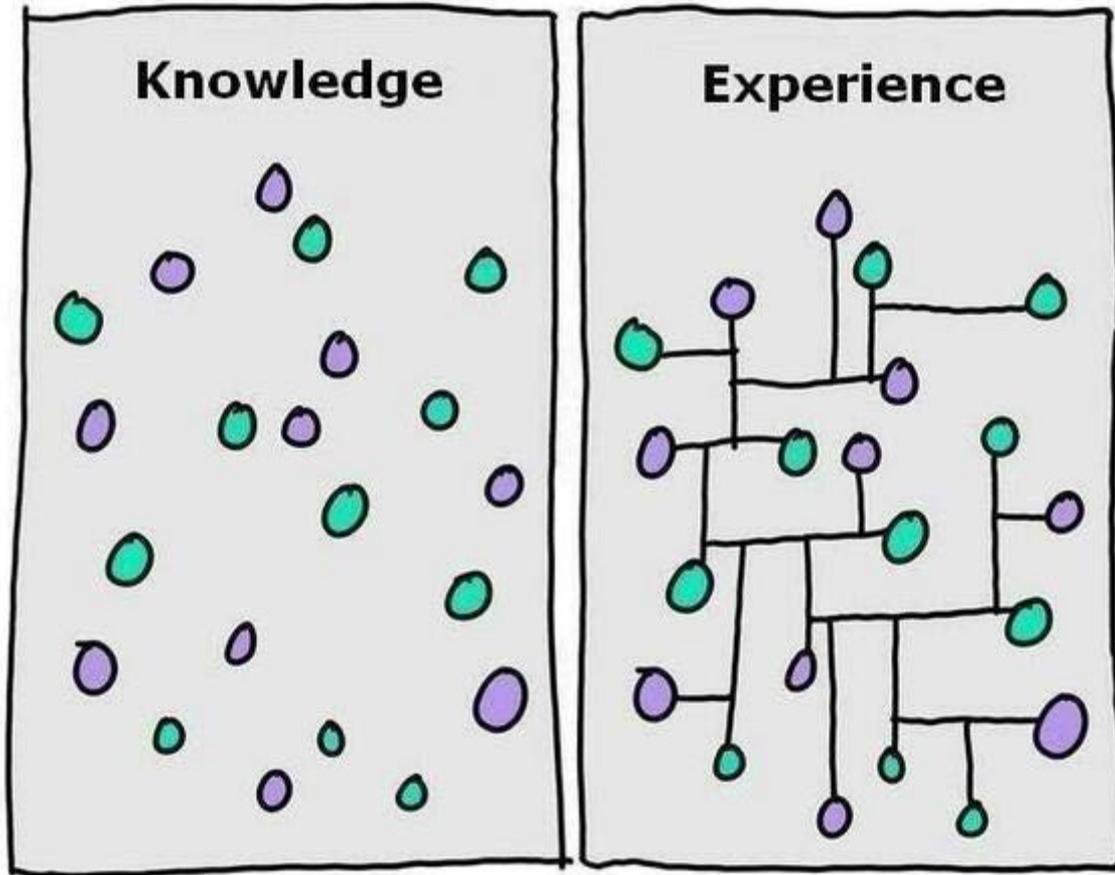
Engineers help (WHO) to (WHAT) so they can (BENEFIT)

- Tim David

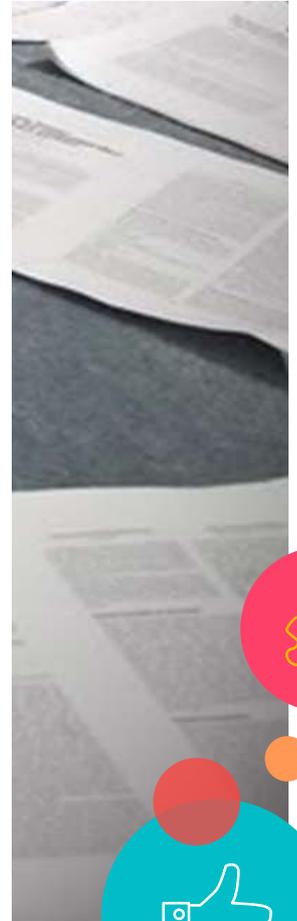
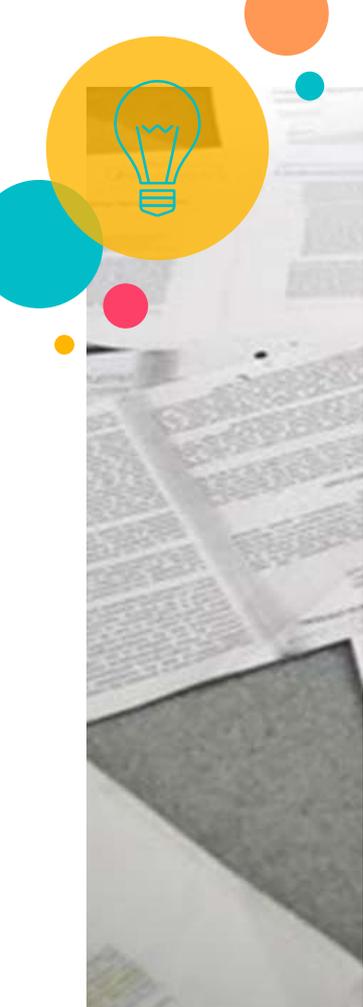
*Author, Magic Words: The Science and Secrets Behind Seven Words
That Motivate, Engage, and Influence*







Credit: Hugh MacLeod, Cartoonist





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3's

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Be Concise

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EFFECTIVE
TECHNICAL
COMMUNICATION





3 TASKS IN SCIENCE COMMUNICATION

1. Identify Relevant Science that Audience Should Know
2. Determine What Audience Already Knows
3. Fill the Gaps/Provide Details





REFERENCES

Althoff, T., Susic, R., Hicks, J. L., King, A. C., Delp, S. L., & Leskovec, J. (2017). Large-scale physical activity data reveal worldwide activity inequality. *Nature*, *547*, 336-339. doi:10.1038/nature23018

Fischhoff, B. (2013, August). The sciences of science communication. *Proceedings of the National Academy of Sciences*, *110*, 14033-14039. doi: 10.1073/pnas.1213273110

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