How many tools of communication?

- Phone
- Text
- Twitter
- Email
- Blog
- Face book
- Voicemail
- Snail mail
- Fax
- internet
- Instant message
- Person to Person

Verbal Messages May Be Deceiving (Math Quiz)

These Numbers are easy to add, so do them in your head as we go. Trust me It should not tax anyone to add them.

Add 1000 plus 40.
- Now add another 1000
- Now add 30
- Add another 1000 to it.
- Add 20
- Add another 1000.
- Now Add 10
- What is the answer

How Many Got 5,000?

The Answer is 4,100

The Mind and the written word!

(Volunteer to read)

Aocdrnig to rscheearch at an Elingsh universtiy, it doesnt mttaer in wthdr ordr the ltteers in a wrod are, the olny iprmoetnt tihng is taht the frist and lsat ltteer are in the rghit pclae. The reset can be a toatl mses and you can stil rd it wouthit a porbelm. This is buseae we do not rd evey ltre by it slef but the wrod as a wlohe and the md fguers it ut aynawy.

The Components of a Message

The Mind and the written word!

55 Percent

A. 7 Percent

B. 38 Percent

D. 100 Percent

C. 55 Percent
To believe this ...........

- Try talking to a Baby... and watch yourself

**Conclusion**

- So What?
- The person who has all communication skills will be the winner!
  - The professional who is proficient at this skill would be more effective in many aspects of life.

**Body Language at its Best**

**DAYLIGHTING PRODUCTS**

BY CORY M. ALDER
I AM A CONSULTANT, NOT A SALESMAN
CORY M. ALDER

And What Do We Typically Think Of Salesmen?

ALDER SALES CORPORATION
- Specialty Sub-contractor Since 1935
- Furnish, install, and service all our own products
- 4th generation company
- Market to the Architectural, Design Build, and Contractor Communities

Two Types of Daylighting Strategies
1. Top Lighting
   - Skylights (Traditional)
   - Provides Daylight From Roof
   - Up to 9% of Roof Area Devoted to Skylights
   **Benefits:**
   - System Independent of Building Orientation
   - Can Evenly Daylight Interior Spaces
   **Challenges:**
   - Lack of Control (Light Patterns & Output)
   - Top Floor Applications
   - Lack of Reconfiguration Flexibility
   - Complex Architectural Integration
   - Historical Problems with Leaks
   - Heat Loss / Solar Gain

2. Side Lighting
   - Daylight Access From Perimeter
   - Creates Perimeter Daylit Zone
   - Orientation Dependent
   - Common for Residential & Commercial Buildings

Types of Daylighting Strategies
- Top Lighting
- Side Lighting
Daylighting Facts

**Why Use Daylighting...**
- Improved Staff Productivity
- Increased Retail Sales
- Improved Student Performance
- Greater Occupant Well-Being and Satisfaction
- Reduced Environmental Impact of the Building
- Reduced Energy Costs
- Reduces the effects of SAD

Daylighting Facts

**Improved Student Performance**
- A one-year Swedish study of 90 school children showed that lack of daylight can disrupt several body clocks, resulting in significant psychological and physiological impairment. Photobiologist John Nash, Ph.D., reported that natural light in classrooms reduced reported incidents of aggressive, disruptive and destructive behavior among students. International Journal of Biosocial Research
- A recent study conducted by the Heschong Mahone Group for Pacific Gas & Electric Company (www.h-m-g.com) found that classroom design was important for teacher retention.

Daylighting Facts

**Productivity**
- Productivity gains of 6 - 14%, including decreased absenteeism and improved quality of work. Companies spend on average 70 times as much money (per square foot per year) on employee salaries as on energy, therefore an increase of just one percent in productivity can result in savings that exceed the company’s entire energy bill. Andy Swinimer Institute
- Most schools in the Netherlands have naturally lit classrooms, less for the students than for an awareness of how important it is to maintain the most productive and healthful workplaces for teachers. An Atlanta-based research firm recently found teachers in the U.S. place similar emphasis on their work environment. About 89 percent of 1,000 public school teachers surveyed reporting that classroom design was important for teacher retention.

Daylighting Facts

**Greater Occupant Well-Being and Satisfaction**
- Employees who sit near windows have 20% fewer symptoms common to workers in “sick buildings.” The conclusion: Give people light and spend less on health care. U.S. Department of Energy
- Absenteeism rates dropped 25% after natural light was introduced to PJ&L’s workforce. Pennsylvania Power & Light

Daylighting Facts

**Reduced Environmental Impact of the Building**
- (1) 11.2 kWh (2-lamp T5/G12) fixture operating 6 hours/day, 7 days/week, 52 weeks/year uses 244.6 kWh of electricity.
- Offsetting this use fixture with daylight prevents
  - 16 lbs of CO₂ Emissions/y for Oil/Gas-based generation
  - 5.4 lbs of CO₂ Emissions/y for Coal-based generation

Daylighting Facts

**Energy Savings**
- Lighting Energy End-Use
  - Lighting Typically Largest Diver of Annual Utility Costs
- Reduced Energy Consumption
  - Lighting energy and for fixture and enhancement costs could be reduced by as much as 97%
- Reduced Demand at Peak Demand Times
  - Usually Between 11:00 AM to 4:00 PM - During Peak Daylight Hours

Daylighting Facts

**Featured Products**

- *Kalwall® Translucent Panel Systems*
- *SOLATUBE Innovation in Daylighting* Tubular Skylights
What is Kalwall

- A true sandwich panel for permanence, backed by over 40 years of experience
- Permanent glass wall systems harder architectural face to tough and resist anti-epoxy
- Grid core of precision-introduced 1-hour may be thermally broken
- Interior cladding with fast-frame to meet interior finish, flame and smoke requirements, the toughest codes

Alder’s Office

Why Use Daylighting

- Aesthetics
  - More attractive learning environment
  - Dynamic, Natural, Full Spectrum Light
  - A connection with the outdoors...without distraction
  - True color rendition

- Health Benefits
  - Promotes health and well-being
  - Helps to overcome S.A.D. (Seasonal Affective Disorder)
  - Strengthens Immune System (benefits children with diabetes)
  - Actually stimulates growth and lessens dental decay
  - Improved vision...better for the eyes

- Enhanced Student Performance
  - Better Test Scores...up to 26% higher in reading, 20% in math
  - Students are more alert
  - More productive
  - Better Attendance...study’s show fewer sick days

- Economic Advantages
  - Saves on Heating and Cooling
  - Can lower Electric Lighting Costs

There are Many Misconceptions About Skylights

Enhanced Student Performance

- Better Test Scores...up to 26% higher in reading, 20% in math
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Economic Advantages

- Saves on Heating and Cooling
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Inkom Elementary School

Glare Free Natural Daylight

INSULATED

Up to 60% more insulating than glass for lower heat and air conditioning costs! Maximize Energy Savings!
Stan Laub Football Training Facility (USU)

BYU Indoor Football Training Facility

Able to Practice without lights turned on

Who Gets Hurt When You Use Daylighting Improperly?

The Owner or the Architect

Weber State University

Sunlight vs. Daylight

Sunlight is… Direct Light from the Sun
Daylight is… The “light of Day”

Daylight is also Controlled Sunlight
Gunnison Pool

Excellent Use of Daylighting

Cottonwood Heights Pool

Excellent use of Daylight and Sunlight

Roosevelt Jr High

No Harsh Glare on the Computer Screens

Wasatch Distributing

Fully Pre-Engineered Wall Opening
McKay Dee Hospital

Clear-Span Openings
Of Up To 24’ Without
Exposed Support

Kalwall Installation

- Installs Quickly
- Makes Renovations Easy

What Happens If You Install Your Own
Specialty Product?

What Can Our Installation Do For You?

- Save time and money
- Manufacturers warranty
- Installation warranty
- Owner satisfaction
- Longevity of product

Low Cost Is NOT Low Bid
Cottonwood Heights Recreation Center

- Shatterproof
- Designed for impact and vandalism damage reduction: special faces even tougher

Cottonwood Heights Ice Arena

- Low Solar Heat Gain

South Ogden Jr. High School

- Low Contrast of Light and Dark

Wahlquist Jr High

Salt Lake Community College

- Withstands Tremendous Abuse
Together to Help You Better Serve Your Clients

- The new Kalwall panel with R-20/20% LT
- What is Nanogel and how it makes this possible!
- Client Satisfaction

What is Aerogel?

Invented in 1931 by Steven S. Kistler
Cabot developed unique process-2002 Plant started
The lightest weight most highly insulating solid in the world
Reduced cost
Safe process
Continuous/high volume
Briefly commercialized in 1950’s by Monsanto
Expensive
Dangerous
Low volume/batch

How Does Nanogel® Work?

- A low-solids wispy matrix of glass or pure silicon dioxide with extremely small pores
  - 5% Air
  - 20 nanometer pore sizes
- Aerogel is the lightest solid, best insulating material in the world

Kalwall + Nanogel

Eliminates the Downsides of Daylighting
- flexibility to meet codes
- improved thermal performance
- improved acoustic properties
- condensation resistance
- resistance to mold and mildew
- constant insulating properties - no change
- museum quality light

Comfort Inn

Thermal Insulation
First Project with Nanogel®

11:00 AM, December 6, 2002
The pool area is 90°F, but there’s frost on the outside of the panels.
The Daylight Fixture

- The Solatube Daylight Fixture uses optics to more effectively collect, redirect, control, & diffuse daylight.
- The Optical System
  - Capture light through UV filtering dome with the patented Light Intercepting Transfer Device (LITD).
  - Brighten Up Series also has Raybender Technology, a Fresnel lens built into the dome to redirect low angle light.
  - Transfers light through Spectralight® Infinity tubing with ultimate specular reflectivity.
  - Solatube Daylight Dimmer allows the user to control light output.
  - Spreads light into the interior with OptiView® diffuser, reducing glare and hot spots.

Engineered for Hassle-free Performance

- UV and Impact Resistant Dome for extended service life.
- Seamless Flashings are fabricated as a single, seamless piece to ensure leak-proof performance available in both self-flashing and curb mount.
- Small 23" Diameter Roof-top Penetration fits between normal structural framing.
- Compact and Adjustable Tubing fits around plenum obstructions.
- Installation is Quick and Easy without structural reframing, mess, or hassle.
- Easily Reconfigured to accommodate future interior layout changes.
- Patented 3"x3" transition box and diffuser panel fits a standard suspended ceiling tile grid or hard ceiling and blends with traditional lighting fixtures.

Engineered for Hassle-free Performance (Cont.)

- Open Ceiling System provides fast and cost-effective daylighting solution for open ceiling applications.
- Compact Size allows layout control so light can be placed and focused between racking aisles.

Full Daylight Modulation with "Daylight Dimmer"

- Solatube Daylight Dimmer available in all product sizes – for 10", 14" and 21" Solatubes.
- Universal Line Voltage system with integrated transformer and low voltage control wiring provides simple wiring solution.
- Variable Light Control right at your fingertips – modulate daylight levels between 100-2% light output in 8 seconds or less.

A Daylighting Revolution

- Solatube International is committed to high-quality, cost-effective manufacturing to mainstream product.
- Solatube optics minimize lighting variations due to location, time, & season.
- Solatube eliminates the need for special & costly building articulation.

Light output of one 21" Solatube can displace 6 to 8 FO32T8 fluorescent lamps (2 to 4 fluorescent troffers).
- Use Solatube to enhance existing lighting system.
- Or, use Solatube to displace ambient light system.
Simple Design Solution

Application Notes
- Key Technology Concepts:
  - Top lighting product to daylight top 1 or 2 floors.
  - Tube runs of up to 40' possible, 6-10' typical.
  - Used for 9' ceilings.
  - Design & installation similar to standard 2x2 lensed fluorescent troffer.
  - Spacing should not exceed 1.3 x MH (1.0 to 1.3 x MH preferred).
  - System should be occupied during peak daylight hours (~8:00AM to 4:00 PM).

Ontario Christian Schools

+Project Review
Classrooms and Corridors
Product Installed:
- 82 – 21” Suspended Ceiling w/ OptiView
- 14 – 14” Units
- Daylight Dimmers in New Classrooms
- Typical 32’x 32’ Classroom (10’ Ceiling)
- 6 – 21” Solatubes w/ Daylight Dimmers
- 10’ x 10’ O.C. Spacing

Questions?
- www.alders.com
- www.kalwall.com
- www.solatube.com
- Contact Cory Alder at: calder@alders.com