

Slide 1

SJSU - JS 122  
Drugs and Society  
**Susie Rivera**  
Lecturer

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Slide 2

**Lesson Plan : Scope of Problem**

Research-CASA 1998

- 1.7 million incarcerated (2000)
- 1.4 million-substance use disorder
- 1996-38 billion to build and maintain 4,700 prisons
- Last decade-CA-1 college, 15 prisons
- 21%-influence alcohol
- 3%-cocaine

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Slide 3

**Scope of Problem-cont.**

Alcohol

- Over 100,00 related deaths-U.S.
- 12-17 age group
- 9 yrs. Old, 4<sup>th</sup> grade-Introduction
- Women and dependency
- Fetal Alcohol Syndrome

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Slide 4

Scope of Problem-cont.

Tobacco

- 3 million worldwide die
- U.S.-over 400,000
- Increase 12-17 yr. Olds.

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Slide 5

Scope of Problem-cont.

Beliefs and Attitudes

- Who abuses alcohol & other drugs?
- Why do people use alcohol & other drugs?
- Premise: "Drug taking is bad. I drink alcohol...therefore, alcohol is not a drug."
- List of good/bad drugs
- Most harmful/least harmful

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Slide 6

Lesson Plan : Historical Perspective

- Early years
  - Gallo Bros/Joy Plant
  - Cocaine Mummies
- 1800's
  - Opium Wars-Laudanum
  - Civil War-Morphine
  - Bayer Co.-Heroin
  - Freud-"Coca Papers"
- 1900's
  - Harrison Narcotic Act-1914
  - Reefer Madness

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Slide 7

**Lesson Plan : Drug Classification**

- Degree of medical effects on body
- Acute
  - Short-term/limited dose
  - Heart attack, seizures
- Chronic
  - Long-term/prolonged effect
  - Heart/lung/liver
  - Post-Drug Impairment Syndrome

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Slide 8

**Lesson Plan : cont.**

- Uppers-Stimulants
  - CNS-Central Nervous System
  - Euphoria
- Downers-Depressants
  - CNS-Central Nervous System
  - Relieves stress
  - Induces sleep

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**Lesson Plan : cont.**

- Sedative-Hypnotics
  - Barbiturates
    - Mild sedation to coma dose
  - Benzodiazepines
    - Reduces anxiety
    - Fewer side-effects
  - Alcohol
    - Sedates-irritates

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Slide 10

Lesson Plan : cont.

- Opiates-Narcotics
    - CNS-Central Nervous System
    - Relieves pain/induces sleep
    - Natural/synthetic
  - Hallucinogens/Psychedelics
    - Alters sensory processing
    - Perceptual disturbances
- PCP-any category*

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Slide 11

Lesson Plan : cont.

- Inhalants-Solvents
  - Neuro-toxic
- Handouts
  - Drug Classification
  - Schedule of Drugs

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Lesson Plan - Definitions

- What is a **drug**?
  - Chemical substance
  - Physical, mental, emotional change
- What is a **psychoactive drug**?
  - Alters functioning-CNS
  - 4,000 plants, 8,000 patents
  - Licit, illicit
  - Prescription/OTC

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Lesson Plan : cont.

- What is **drug misuse**?
  - Inappropriate/unintentional use
- What is **drug abuse**?
  - Intentional/inappropriate use with physical, mental, emotional, financial, or social consequences
- What is **addiction**?
  - Chronic, progressive, relapsing, incurable, and potentially fatal condition
  - Consequence of genetic irregularities

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Lesson Plan #3: cont.

- **Route of Administration**-How quickly drugs travel to CNS
  - Orally
  - Snorting
  - Injecting
  - Inhaling
- **Poly-abuse**
  - More than one drug-the norm
- **Dependence**
  - Cellular adaptation
  - Absence the drug-physical withdrawal

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Lesson Plan # 3: cont.

- **Tolerance**
  - More drug-less effect
  - Tissue resistance
- **Synergism**
  - Whole is greater than the sum of its parts
- **Metabolism**
  - Terminating effects of the drug in the body
- **Excretion**
  - Elimination through the kidneys
  - Implications for drug testing

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Lesson Plan: cont.

- Blood Brain Barrier
  - Selective filter
- Weight
  - Drug laws-categorized by weight
  - Controlled Substance Act of 1970-
    - Health & Safety Code (California)

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Lesson Plan: Brain Basics-  
Neuroanatomy

- **Psychopharmacology**
  - How psychoactive drugs affect CNS
  - Mimic or interfere
  - Overexcite or depress
- **Neuroanatomy**
  - Mechanism in which messages are transmitted by CNS
  - 100 billion neurons-brain cells
  - 100 trillion possible connections
- Behavior depends on this communication-neuron to neuron

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Lesson Plan : cont.

- Old Brain-reptilian, clumsy
  - Medulla
  - Cerebellum
  - Nucleus Accumbens
  - Inferior Colliculus
  - Superior Colliculus
- New Brain
  - Cerebral Cortex

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Lesson Plan : cont.

- **Neurotransmitters**-biochemical's that transmit message from one neuron to another
  - 60-100 NT's
- **Neurotransmission**-Relay of information between neurons
  - Within neuron-electrical
  - Between neurons-chemical
  - Synaptic gap-distance between neurons
  - Agonist
  - Antagonist

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Lesson Plan : cont.

- **Bill Moyers-*The Hijacked Brain***
  - Dopamine levels depleted
  - Paranoia/psychosis-drug induced
  - No control-compulsive
  - Anhedonia
  - Pleasure Circuit-brain remembers
  - Nucleus Accumbens

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Lesson Plan : Theories of Addiction

*"All theories are relevant to some degree. Rigid views limit the scope of recovery."*

- Moral Theory
- Psycho-Analytic Theory
- Personality Theory
- Behavioral Theory
- Social/Cultural Theory

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Lesson Plan : cont.

- Addictive/Disease Theory
  - Chronic, progressive, relapsing, incurable, potentially fatal
  - High susceptibility/liability
  - Genetic Predisposition
  - Loss of Control

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Lesson Plan : cont.

- Bio, Psycho, Social Theory- Risk Factors
  - **Bio**-genetic predisposition, heredity, physiology
  - **Psycho**-personality, psychiatric condition, self-esteem, life events
  - **Social**-cultural environment, peer pressure, learned behavior

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Lesson Plan : cont.

- **Symptoms** of the disease of addiction-both physical and psychological
  - Craving
  - Compulsion
  - Continued use in spite of negative consequences
  - Denial
  - Tolerance
  - Dependence

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Lesson Plan : cont.

- Pattern/Progression of use
  - Experimentation
  - Social/Recreational
  - Habituation
  - Addiction/Disease

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Lesson Plan : Depressants

- Anxiety disorders-the most common form of mental illness
- **Barbiturates**-powerful CNS depressant
  - Treat insomnia, anxiety, tension
  - Prevents or mitigates epileptic seizures
  - Tolerance builds quickly
  - Interrupts R.E.M. sleep
  - Impairment of memory, judgment
  - Cross-tolerant
  - Withdrawals can cause medical emergency

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Lesson Plan : cont.

- **Benzodiazepines**-“magic bullet”
  - Produces sedation/induces sleep
  - Relieves anxiety, muscle spasms
  - Develops tolerance more slowly
  - Risk: extended time-high dose
  - Risk: mix with alcohol
- **Methaqualone**-“Ludes”
  - No legal medical use
  - Scored with “714”
  - Method of use-mix with alcohol

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Lesson Plan : cont.

- **Rohypnol-**"roofies"
  - Benzodiazepine family
  - 10x more potent
  - Hoffman-LaRoche-no medical use
  - Symptoms-withdrawals
  - Anterograde Amnesia
  - Scheduled Drug

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Slide 29

Lesson Plan : cont.

- **GHB-Gamma Hydroxy Butyrate**
  - *Blue nitro, Georgia Home Boy, greivous bodily harm, liquid E, easy lay*
  - Scheduled Drug
- **Potential for abuse**
  - Clear, odorless, slightly salty taste
  - Date-rape drug
- **Symptoms**
- **Withdrawals**

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Slide 30

Lesson Plan : Alcohol

- **Alcohol, Ethel Alcohol, Ethanol**
  - Statistics
- **Facts:**
  - CNS depressant
  - Irritates & Sedates
  - Lowers inhibitions
  - Alters mood, feeling, coordination, perception, & behavior

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Slide 31

Lesson Plan : cont.

- **Impact on the Brain**
  - Frontal Lobe
  - Cerebellum
  - Medulla Oblongata
- **Blood Alcohol Concentration (BAC)**
- **Rate of Absorption**
  - Factors
- **Metabolism**
  - Time factor
  - DMV Legal Limit

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Slide 32

Lesson Plan : cont.

- **Penalties**
  - DUI
- **Fetal Alcohol Syndrome (FAS)**
  - Facts
  - Risk factors
  - Features

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Slide 33

Lesson Plan -Alcohol,  
Binge Drinking

- **Prevalence of drinking**
  - Per capita consumption
  - Heavy drinking
    - Age, ethnicity
- **Social**
  - Low B.A.C.
  - Reasonable intervals
  - Take it or leave it attitude
- **Problem**
  - Family, legal, employment, \$,physical

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Lesson Plan -cont.

- Alcoholic-10-12% pre-disposed
  - Loss of control
  - Craving
  - Compulsion
  - Tolerance
  - dependence
- Signs of Alcoholism
- Signs of alcohol withdrawal

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Slide 35

Lesson Plan -cont.

- Binge Drinking-48 Hrs.
  - 4-5 drinks at a sitting
  - 10 million underage drinkers
  - Risk of teenage drinking

Mid-term review

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Lesson Plan : Cocaine

- **Cocaine-Erythrozylon Coca**
  - Most powerful CNS stimulant
  - Schedule II Drug
- **2001-National Household Survey**
  - Current cocaine users 2001 vs. 1985

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Slide 37

Lesson Plan :cont.

- **National Household Survey/D.A.W.N. Drug Abuse Warning Network-E.R. Episodes**
  - 2000-2001
  - Gender
  - Ethnicity
  - Trends
- **Freud & the Coca Papers-1884**
  - Cure for morphine addiction
  - Coca-Cola-"temperance drink"
    - 60 mg. Cocaine per 8 fl. Oz.

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Slide 38

Lesson Plan : cont.

- **Cocaine Epidemics**
  - 1886-1891-Europe
  - 1894-1891-Europe & U.S.
  - Mid-1980's-U.S. (crack cocaine)
- **Cocaine Processing**
  - 100-150 kilos (kilo+2.2 lbs.) of drug leaves produces 1 kilo pure pasta
  - Mixed w/ diesel fuel, lime, bicarbonate
  - "Stepped on", cut with adulterants
  - 1998-454 metric tons (1,000 kilograms/ 2,204.6 lbs.) shipped into U.S.
  - 1 gram \$40-150

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Slide 39

Lesson Plan : cont.

- **Neurotransmission**
  - Dopamine, Norepinephrine, Serotonin pathways
  - Dopamine-pleasure/reward center
  - Blocks Dopamine re-uptake
  - Energy supplies depleted
- **Route of Administration**
  - **Snorting** (intranasal) most common
    - 5% of cocaine absorbed
    - Septal Necrosis- destroys cartilage separating nostrils
    - Lung infections common

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Slide 40

Lesson Plan : cont.

- **Injecting** (Intravenous) least common
  - Cocaine hydrochloride (powder) mixed w. water & injected into vein
  - Quicker route to the brain-rush
  - Risk of HIV-AIDS, inflammation of heart lining (endocarditis), hepatitis
  - Speedball-injecting mixture of cocaine \* heroin
- **Freebase-1970's**
  - Separating molecules using Ether-volatile

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Slide 41

Lesson Plan : cont.

- **Inhaling Smokeable Cocaine-Crack**
  - Dirty-basing
  - Cocaine Hydrochloride cooked with sodium bicarbonate & adulterants-lower temperature
  - Quick route to the brain-powerful reinforcement for compulsive use
- **Rate of Absorption**
  - The faster the absorption, the more intense the high and shorter the duration

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Lesson Plan :cont.

- **Short-term effects**
  - Euphoric
  - Constricted blood vessels
  - Dilated pupils
  - Increased BP, heart rate, temperature
- **Long-term effects**
  - Addiction/Dependence
  - Mood disturbances
  - Cardiomyopathy
  - Formication Syndrome- "coke bugs"
- 11350 H&S; 11550 H&S

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Slide 43

### Lesson Plan -Crack Cocaine

- **Smokeable Cocaine-Crack**
  - mid-80's
  - Converting Cocaine Hydrochloride
  - Cook and broken into "rocks"- 0.89 grams each approx.
  - 75-90% pure
  - \$3-40-rock or vial of crack
- **Inhaling**-efficient route of administration
  - Fat soluble
  - Prone to binge use
  - 50 rocks/day-1/20<sup>th</sup> a gram-\$5-20 each
  - Per gram, crack costs twice the price

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Slide 44

### Lesson Plan : cont.

- **Side effects**
  - More intense
  - Respiratory problems
  - Tachycardia
  - Seizures/stroke
- **Crash**
  - Sleep for days
  - Anhedonia
  - Anergia

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Slide 45

### Lesson Plan : cont.

- **Cocaethylene**
  - Mixing cocaine & alcohol
  - Intensifies euphoric effect
  - Risk of sudden death
- **Current research- "crack" babies- National Institute of Drug Abuse-1999**
  - Fetal cocaine exposure
  - What stage of development
  - Developmental issues

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Slide 46

Lesson Plan :  
Amphetamines/Meth

- Amphetamine/Methamphetamine
  - CNS stimulants-Speed, Crank, Crystal, Ice
  - Schedule II Drug
- History
  - Analog of Ephedrine
  - 1927-medical use
  - WWII
  - 1960's-1970's-weight loss, truckers, bikers, students
  - 1967-Summer of Love
  - Operation Desert Storm-1991

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Slide 47

Lesson Plan : cont.

- Neuropathway
  - Norepinephrine
  - Dopamine
  - Serotonin
- Side-effects
  - Dilated pupils/increased blood pressure
  - Rapid & irregular heart beat
  - Hyper-pyrexia-body temperature higher than 104 degrees
  - Weight loss- anorexia

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Slide 48

Lesson Plan : cont.

- Side effects: cont.
  - Involuntary body movements
  - Tinnitus
  - Aggression
  - Paranoid delusions
  - Stimulant induced psychosis
  - Visual hallucinations
- Handouts
- Video: *Rush to Crash*

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Slide 49

### Lesson Plan - Methamphetamine

- Drug Abuse Warning Network (DAWN)
    - ER episodes for Methamphetamine distress-
    - Trends
  - High Intensity Binge Use
    - Binge cycle
    - Withdrawal
- Video: MTV: *Meth Madness/Tweaked*

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Slide 50

### Lesson Plan - Other Stimulants

- Ritalin-Methylphenidate
  - Schedule II Drug
  - Amphetamine analog
  - Powerful stimulant
  - 2-3% elementary students
  - More than 2 million prescriptions
  - 500% increase

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Slide 51

### Lesson Plan - cont.

- Attention Deficit Hyperactivity (ADHD)
    - 3 times more prevalent in boys
    - Symptoms-outside of school
    - Symptoms-at school
    - Ritalin works paradoxically
- Not first treatment of choice

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Slide 52

Lesson Plan - cont.

- **Khat, Cat, Cathinone(active ingredient)**
  - Milder stimulant
- **Methcathione**
  - Synthetic version
  - Main raw ingredient-Ephedrine
- **Ephedrine**
  - Ephedra bush
  - Controlled by Federal Gov't
  - Extracted as ingredient for Meth

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Slide 53

Lesson Plan - cont.

- **Nicotine Statistics**
  - Over 400,000 related deaths
  - \$50 billion in health care costs
  - 1995- 62,000 deaths from lung cancer; 46,000 deaths from breast cancer
  - Deaths from secondhand smoke
- **Nicotine**
  - Powerful stimulant
  - 10mg. Nicotine per cigarette
  - 7-15mg. Tar
  - Dozen gases-carbon monoxide

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Slide 54

Lesson Plan - cont.

- **Neuropathways**
  - Norepinephrine
  - Acetylcholine
  - Dopamine
  - Physical complications
- **Hooked in 4 hrs.**
- **Research animals**
- **Drug abusers and tobacco**

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Slide 55

### Lesson Plan - cont.

- At risk populations
- Bidi's
- Caffeine
  - Chemical compound found in over 60 species of plants
  - Prevalence of caffeine consumption
  - Tolerance and dependence
  - Acute effects of caffeine

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Slide 56

### Lesson Plan: Inhalants

- **Inhalant Classification/Features**
  - Depressive/Hallucinogenic
  - Lipid soluble
  - Neuro-toxic
  - Dopamine Neuropathway
  - Statistics-Monitoring the Future Survey
    - 6% of U.S. children used by 4<sup>th</sup> grade
    - More boys than girls-grades 4-6
    - Higher in Native American youths

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Slide 57

### Lesson Plan : cont.

- Risk Factors
- Graffiti-tagging
- **Volatile Solvents**
  - Vaporize at room temperature
  - List of chemicals
  - Toluene-active ingredient
    - 381(a) PC-Possession, misd.
- **Aerosols**
  - Contain propellants & solvents

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Slide 58

Lesson Plan : cont.

- **Gases-Anesthetics**
  - Dissociative effect
  - Nitrous Oxide-"laughing gas"
    - 381(b) PC-Possession, misd.
- **Nitrites**
  - Dilate blood vessels
- **Methods of use**
  - Sniffing
  - Huffing
  - Bagging

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Slide 59

Lesson Plan : cont.

- **Effects**
  - Intoxication
  - Euphoria
  - Impaired judgment
  - Violent behavior
  - Delusions
  - Damage to heart, lungs, liver, kidneys
- **Sudden Sniffing Death Syndrome**
  - Asphyxiation
  - Suffocation
  - Choking
  - Loss of consciousness

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Slide 60

Lesson Plan : cont.

- **Recognizing inhalant abuse**
  - Chemical odor
  - Paint on hands, face, clothing
  - Drunk or disoriented appearance
  - Slurred speech
  - Nausea or loss of appetite
  - Inattentiveness, lack of coordination, irritability, depression

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Slide 61

### Lesson Plan : Steroids

- **Steroids**
  - Synthetic derivatives-testosterone
  - Androgenic
  - Anabolic
- **Statistics**
- **Medical Uses**
  - Anemia
  - Breast, testicular cancer
  - Nasal spray
  - Tissue re-growth
  - Inadequate testosterone production

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Slide 62

### Lesson Plan : cont.

- **Competitive Edge?**
  - Increase muscle mass
  - Ability to train longer
  - Research-improvement
  - Black market
- **Federal Laws**
- **Route of Administration**
  - Orally
  - Injecting
  - "Stacking"
  - "Cycling"

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Slide 63

### Lesson Plan : cont.

- **Risks**
  - Compulsive use
  - Loss of control
  - Liver tumors
  - "roid rage"
  - Men-side effects
  - Women-side effects
- **Androstenedione**
- **Creatine**

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### Lesson Plan: LSD, PCP & other Hallucinogens

- **Lysergic Acid Diethylamide-LSD-25**
  - Potential to produce hallucinations
  - Alters thoughts, perception & feelings
    - Albert Hoffman-1938
    - Fungus "ergot"
    - Timothy Leary-1960's
    - "Tune in, Turn on, Drop out"
  - Operates on Serotonin NT
  - Tolerance builds quickly-no known dependence

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Slide 65

### Lesson Plan: cont.

- **Perceptual side-effects**
  - Turns off biological filter
  - "Turns the lights up"
  - "Turns down the background"
  - Magnifies whatever's left
    - Experienced intensely
    - Bright spark of pleasure in a dark space
- **Bad trip**
  - Magnification of something negative pre-existing in the brain
  - Blows up what's there
    - Beautiful-Ugly

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Slide 66

### Lesson Plan: cont.

- **Dose**
  - 50-150 micrograms
    - 3 hits of 50 micrograms blotter acid-\$10
- **Sensory Effects**
  - Vary with dose, setting & mood
  - *Synesthesia*
- **Psychic effects**
  - Thought disorders
- **Extreme side-effects**
  - Depersonalization, acute anxiety, depression

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Slide 67

Lesson Plan: cont.

- **Peyote Cactus**
  - Active ingredient- Mescaline
  - Tolerance builds quickly
  - No physical dependence
  - Used in religious ceremonies
  - Cactus button-50 milligram of mescaline
  - Synthesized- liquid, capsule, tablet
  - Effects

AJ 122

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Slide 68

Lesson Plan: cont.

- **Psilocybin-"Magic Mushrooms**
  - Chemically similar to LSD
  - Less potent than Peyote-Mescaline
  - shorter-acting, milder
  - Consumed orally as dried mushrooms, liquid, or tablets
  - Used in religious ceremonies
  - Effects

AJ 122

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Slide 69

Lesson Plan: cont.

- **PCP-Phencyclidine-Angel Dust, KJ, Dust**
  - Several classifications
  - Schedule II Drug
  - History
  - White crystalline powder
  - Fat-soluble
  - Method of use

AJ 122

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Slide 70

Lesson Plan: cont.

- **Effects**
  - Dissociative- protects from feelings
  - Anesthetic-feel no pain
  - Increased heart beat, BP
  - Chronic use-loss of brain function
  - Other effects....
- **Biggest risk factor:** *Unpredictable*
- **Statutes:** Health & Safety Code

AJ 122

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Slide 71

Lesson Plan: Club Drugs

- **Club Drugs**-MDMA (Ecstasy), GHB-Gamma Hydroxybutyrate, Ketamine, Rohypnol
- **Raves-Why and What?**
  - Underground raves-1987 G.B., Chicago, Detroit, NY
  - Techno-electronic events-up to 140 BPM
- **Statistics: Surveys**
  - 2000 Monitoring the Future Study
    - 12<sup>th</sup> graders
    - 8<sup>th</sup> & 10<sup>th</sup> graders
    - Perceived availability

AJ 122

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Slide 72

Lesson Plan: cont.

- **Statistics; Surveys, cont.**
  - **D.A.W.N.**-Drug Abuse Warning Network
    - 253 -1994; 4,511-2000
  - Blacks, Whites, Hispanics
- **MDMA-Ecstasy**
  - Synthetic psychoactive drug
  - Methylenedioxymethamphetamine
  - 90% imported illegally from Netherlands-pill form
  - DEA
  - Tablets 60-120mg. \$25-40 each
  - Schedule I Drug- 1985

AJ 122

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Slide 73

Lesson Plan: cont.

- **MDMA-Ecstasy, cont.**
  - Stimulant
  - Hallucinogenic
  - Neuropathways: Serotonin, Dopamine, Norepinephrine
  - Serotonin-levels depleted
    - Mood, sleep, pain, emotion, thought & memory
    - Brain Imaging Technologies
    - Linked with confusion, depression, severe anxiety, impulsive bx, sleep problems, impairment of memory & attention
    - Paranoia, psychotic episodes

AJ 122

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Slide 74

Lesson Plan: cont.

- **Physical Effects**
  - Senses elevated
  - Dilated pupils
  - Body temperature-increase
    - "Malignant Hyperthermia"
  - Increase heart rate, BP
  - Dehydration, nausea
  - Excess energy
  - Muscle tension
  - Involuntary teeth clenching
  - Sleep disturbance
  - Drug craving

AJ 122

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Slide 75

Lesson Plan: cont.

- **Raves-P.L.U.R.**
  - Rolling
  - Candy-flippers
  - Paraphernalia
  - Sensual not sexual
  - Massage parlor
  - Cool down room
  - Dancesafe

AJ 122

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Slide 76

Lesson Plan: cont.

- **Ketamine**
  - Anesthetic
  - 90% veterinary use
  - Snorted, injected
  - "Special K", Vitamin "K"
  - Raves, date rape
  - High doses
  - D.A.W.N.- ER Episodes
    - 19-1994
    - 396-1999

AJ 122

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Slide 77

Lesson Plan #17: Marijuana

- **Cannabis Sativa**
  - Main active ingredient- **Delta-9 Tetrahydrocannabinol-THC**
    - 360 chemicals in cannabis plant
    - 60 metabolites
    - 1960's
    - 1990's, 2000's
    - B.C.Bad
    - Lipid (fat) soluble
    - Chronic users-urine test
- **1930- Marijuana Tax Act**

AJ 122

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Slide 78

Lesson Plan #17: cont.

- **1970-Controlled Substance Act**
  - Schedule I Drug
- **Facts of interest re: Marijuana**
  - Biggest cash crop in U.S.
  - #1 illicit drug used in U.S.
  - Estimated 1,476 metric tons of MJ consumed in U.S.
  - Globally, 200-300 million people
  - U.S.-70 million people
  - 70 more carcinogenic compounds than tobacco

AJ 122

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Slide 79

Lesson Plan #17: cont.

- **2000 Monitoring the Future Study**
  - MJ use remained stable since 2001
    - 8<sup>th</sup> graders
    - 10<sup>th</sup> graders
    - 12<sup>th</sup> graders
  - Height of use: 1979-50.8%
- **DAWN-Drug Abuse Warning System**
  - 1990-17,706
  - 1999-87,150
  - Increased potency

AJ 122

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Slide 80

Lesson Plan#17: cont.

- **Neuropathy**
  - Anandamide
  - Sedative & euphoric
- **Stimulatory Effects**
- **Depressant Effects**
- **Anesthetic Effects**
- **Hallucinogenic Effects**

AJ 122

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Slide 81

Lesson Plan #17: cont.

- **Other Effects**
  - Diminishes ability to perform complex tasks-Research Study
- **Groups most at risk**
- **New Research**
- **Post Hallucinogenic Drug Perceptual Disorder**
- **Amotivational Syndrome**
- **Statutes**
  - D.U.I.- includes marijuana

AJ 122

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Slide 82

### Lesson Plan: Medical Marijuana

- **Medical Marijuana**
  - 1996- California Proposition 215
    - Pro-Con
    - State vs. Federal Law
    - 11362.5 H&SC
- **Supreme Court ruling- 2001**
  - No medical necessity
  - No currently accepted medical use of MJ
  - Federal Controlled Substance Act
  - Need research

AJ 122

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Slide 83

### Lesson Plan: cont.

- **Medical Marijuana debate** –What are the facts?
  - Marijuana vs. Marinol (Dronabinol)
    - Handout
  - Medical efficacy
  - Pharmacodynamics of THC
  - Clinical trials
  - Safe dose
  - Limitations of Scheduling
  - Ethical dilemma

AJ 122

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Slide 84

### Lesson Plan: cont.

- **What do you think?**
  - Change Drug Schedule?
  - Alternative to Marinol?
  - Why conduct research?
  - Should state law rule?
  - What's the message for teenagers?
  - 1994 Study-
  - What if it was your family member or close friend?

AJ 122

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Slide 85

### Lesson Plan: Opiates

- **Pain Control**
  - Chronic pain
  - 1/3<sup>rd</sup> U.S. population
  - Most common reason
- **Narcotic Analgesics**
  - *Narcotics*-Greek for *stupor*
  - Analgesic-pain relief produced w/o loss of consciousness
  - Sedating, painkilling, sleep-inducing

AJ 122

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Slide 86

### Lesson Plan: cont.

- **Natural Opiates**-obtained directly from opium
  - Opium, Morphine, Codeine
- **Semi-synthetic Opiates**-chemically altered derivatives
  - Heroin
- **Synthetic Opiates**-synthesized in laboratories-not derived from natural opiates
  - Demerol, Vicodin, Darvon, Fentanyl, Dilaudid, Percodan, Oxycontin (time-released Percocet), Methadone

AJ 122

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Slide 87

### Lesson Plan: cont.

- **Neuropathway**
  - Endorphin/Enkephalins- NT's
  - Brain's natural pain suppressors
  - Opiates further block pain receptors
  - Mimic action of NT's
- **Opium**
  - Papaver Somniferum-plant that brings sleep
  - Wizard of Oz
  - Grown in: Afghanistan, Iran, Pakistan, China, Burma, Laos, Thailand, Turkey, Columbia, Mexico

AJ 122

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Slide 88

Lesson Plan: cont.

- **Morphine-1803**
  - Synthesized from Opium
  - 10 times stronger
  - Hypodermic needle- effective delivery system
  - Pain relief, cough suppressant, diarrhea
  - Thought to be a cure for Opium addiction
- **Heroin-1874**
  - Synthesized from Morphine
  - 3 to 10 times stronger
  - *Thought to be a cure for Morphine addiction*

AJ 122

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Slide 89

Lesson Plan: cont.

- **Physical effects-dose dependent**
  - Dependence
  - Drowsiness
  - Nausea
  - Pinpoint pupils
  - Lower body temp./BP
  - Respiratory depression
  - Relaxed muscles
  - Flushed, warm face & neck
  - Dry, itchy skin
  - Constipation-

AJ 122

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Slide 90

Lesson Plan: cont.

- **Route of administration**-Opiates easily cross BBB-fat soluble
- **Orally**
  - First pass
  - 20-30 minutes
  - Mild/moderate levels of pain
- **Intravenous**
  - High concentration-bloodstream
  - Greater control
  - 15-30 seconds
  - Skin-popping/intramuscularly-5-8 min

AJ 122

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Slide 91

Lesson Plan: cont.

- **Prescription Drug Abuse**
  - Potential for dependency
  - Higher abuse among women
  - Forged prescriptions
    - Vicodin
- **Oxycontin**
  - High potential for abuse
  - Time-released

AJ 122

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Slide 92

Lesson Plan: Heroin

- **Diacetylmorphine-Heroin**
  - 1998-Leading cause of accidental death in S.F.
- **National Survey on Drug Abuse & Health-2002**
  - 166,000 heroin users-past month
  - 80% under age 26
  - 2.9 Million used at least once in their lifetime
  - 663,000 used in last year

AJ 122

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Slide 93

Lesson Plan: cont.

- **DAWN-Emergency room episodes-2000**
  - 72,217 visits (second to cocaine)
  - 70% increase
  - Snorting Heroin increased 470% from 1988 to 1996
  - 4, 178 deaths
  - 39% increase for whites
  - No significant increase for blacks
- **Heroin dose/purity/cost**
  - Traditionally: 1-10%/Recently 1-98%
  - \$25-1/4 gram; \$10 bag-1/8<sup>th</sup> gram
  - Color varies due to impurities

AJ 122

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Slide 94

Lesson Plan: cont.

- **Short-term effects**
- Tolerance builds/suppression of pain
- Depressed respiration
- Clouded mental functioning
- Nausea, vomiting
- **Long-term effects**
- Addiction
- Infectious diseases
- Collapsed veins/abscesses
- Endocarditis
- Necrotizing fasciitis

AJ 122

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Slide 95

Lesson Plan: cont.

- **Heroin withdrawal**
- Vomiting/stomach cramps
- diarrhea/
- Restlessness/insomnia
- Cold flashes- goose bumps "cold turkey"
- Muscle/bone pain
- Leg movements-"kicking"
- **Overdose-Profile**
- Age/experience
- Treatment-Narcan
- 13%-released from jail 17%-novices

AJ 122

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Slide 96

Lesson Plan: cont.

- **Black Tar Heroin**
- Produced in Mexico
- High purity, low cost, crude method of converting opium gum to Heroin
- 20-30% purity
- \$200 gram/\$4,000 oz.
- Diluted and injected
- **Trends**
- **Lifestyle Danger**
- **Statutes: 11550 H&SC, 11350 H&SC, 4149 B&)**

AJ 122

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Slide 97

### Lesson Plan: Dual Diagnosis

- **Dual Diagnosis-Who?**
  - NIH study
    - How prevalent?
    - Substance abusers
    - Homeless
    - Criminal Justice System
    - Adolescents
    - Proper ID can lead to assessment & treatment
- **Dual Diagnosis-Definition**
  - Major mental disorders
  - Similarity in neurotransmitters
    - Specific drugs

AJ 122

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Slide 98

### Lesson Plan: cont.

- **Dual Diagnosis issues**
  - Asking the question the first step
  - Both disorders must be treated
  - Proper diagnosis & treatment important
  - Need observation-being an expert not important
  - Medication often effective
- **Remember:**
  - You may be the first on to ask the question.
  - Web site: [www.dualdiagnosis.org](http://www.dualdiagnosis.org)

AJ 122

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Slide 99

### Lesson Plan: HIV/AIDS

- **Human Immuno-Deficiency Virus**
  - Breaks down body's immune system
  - T-cells
- **Acquired Immuno-Deficiency Syndrome**
  - Acquired-Something you can catch
  - Syndrome-Set of life threatening conditions
- **HIV-AIDS is not a moral issue. It's a health issue.**
  - It's not who you are, but what you do.

AJ 122

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Slide 100

Lesson Plan: cont.

- **Statistics**
  - World AIDS Day-Cases worldwide
  - 2002-U.S.
  - 1.3 million children
  - 1,000 babies
  - 2002-3.1 million AIDS deaths worldwide
  - 80% of deaths in Africa
  - Fifth leading cause of death in U.S. ages 25-44 yrs.
  - Shift to IV drug use/heterosexual unprotected sex

AJ 122

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Slide 101

Lesson Plan: cont.

- **Transmission Fluids**
  - Blood
  - Semen
  - Vaginal/cervical fluid
  - Breast milk
- **Transmission Modes**
  - Unprotected sexual intercourse
  - IV drug use
  - Blood transfusions-prior to 1985

AJ 122

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Slide 102

Lesson Plan: cont.

- Risky Behavior.....HIV+**  
6 weeks-6 months
- HIV+.....AIDS**  
Up to 19 years ++
- AIDS.....Death**  
2 years +++++++
- **Risk Factors**
    - Alcohol/drugs=risky behavior
    - Immune system compromised
    - Judgment impaired
    - Alcohol & other drugs-increased sexual behavior

AJ 122

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Slide 103

Lesson Plan: cont.

- **Treatment**
  - No vaccine or cure
  - Combination therapies-protease inhibitors-"cocktails"
  - Lifestyle change
    - Ex. Magic Johnson
- **Prevention**
  - Use latex condoms-double up
  - Don't shoot-Don't share
  - Testing
  - Web site: [www.aidsinfo.nih.gov/](http://www.aidsinfo.nih.gov/)

AJ 122

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Slide 104

Lesson Plan: cont.

- **Hepatitis C-new epidemic**
  - What is Hepatitis?
  - SC Co. more than new HIV cases
  - 230,000 cases annually in U.S.
  - Similar transmission fluids-blood more effective method
  - Limited treatment-no cure, may need liver transplant

AJ 122

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Slide 105

Lesson Plan: Treatment

- **Goal of treatment**
  - Quality of life-recovery
  - Higher functioning
  - Sobriety is not recovery
  - One size does not fit all
  - Tx is crucial to recovery
- **Research-Rand Study**
  - Treatment is cost effective
  - Every \$1.00 spent in Tx saves \$7.00 in CJS costs

AJ 122

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Slide 106

Lesson Plan: cont.

- **Thirteen Principles of Effective Drug Addiction Treatment**
  - Research-based guidelines
- **Assessment-Recovery Cornerstone**
  - Needs to be complete, accurate
  - Map provides direction
  - Can be modified as needed-flexible
- **Treatment Modalities**
  - Detox
  - Residential
  - Out-Patient

AJ 122

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Slide 107

Lesson Plan: cont.

- **12-Step Programs: H.A.L.T.-striking a balance**
  - “Never get too...”
- **Narcotic Replacement Therapies**
  - Methadone-agonist
    - No magic bullet
    - Allows person to function
    - Slots into opiate receptor sites
    - Highs are less dramatic
    - Known protocols-proper dose
    - “Dose & Dash”
    - Diverted to black market

AJ 122

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Slide 108

Lesson Plan: cont.

- **Naltrexone- “Revia”-Antagonist**
  - Non-addicting drug
  - Defeats the effect of opiates by occupying opiate receptor sites
  - Lessens craving and high
  - Works best with motivated clients, in addition to treatment
- **Buprenorphine-agonist & antagonist**
  - Chemically related to morphine
  - Possesses a ceiling effect
  - Greater safety profile
  - Less likely to cause respiratory depression

AJ 122

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Slide 109

Lesson Plan: cont.

- **Rapid Opiate Detoxification**
  - Procedure lasting 4-6 hours
  - Patient given Naltrexone under anesthesia
  - Not indicated for every addict
  - Too painless?

Who deserves treatment?

- Barriers to treatment
- Does coercion work?

AJ 122

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Slide 110

Lesson Plan: Drug Courts-  
Proposition 36

- **Drug Courts**
  - \*1989-Miami
  - \*1995-Santa clara County
  - \*3,000 felony/4,000 misd. Cases
  - \*Non-adversarial approach-team
  - \*Use of coercion
  - \*High retention rate
  - \*2001-over 1,000 on Drug Court probation
  - \*Challenged the system-need buy-in

AJ 122

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Slide 111

Lesson Plan: cont.

- **Proposition 36-California**
  - \*November, 2001-passed w/ 61%
  - \*Mandated treatment
  - \*Reduce prison population
  - \*\$120 million for treatment
  - \*No funding for drug testing
  - \*Realities of Prop 36
  - \*Are we better off?

AJ 122

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Slide 112

### Lesson Plan: War on Drugs

- **Have we lost the war?**
  - Wrong terminology
  - \$\$worth the cost
  - What drugs?
  - Scientific knowledge vs. Political reality
  - Drug pusher vs. Drug companies
  - All or nothing debate
- **Legalization**
  - Making legal what is currently illegal
  - Certain illegal drugs legal
    - For who?
    - Which drugs?

AJ 122

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Slide 113

### Lesson Plan: cont.

- What potency?
- Who regulates
- Who enforces
- **Decriminalization**
  - Removal of, or reduction in criminal sanctions for simple possession of drugs
    - CA-less than 1oz marijuana-misd., Fine \$
    - Prevents clogging up the system
    - Wrong message? Condone use?
    - "soft" vs. "hard" drugs

AJ 122

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Slide 114

### Lesson Plan: cont.

- **Harm Reduction**
  - Alternative to supply reduction strategy
  - Public health concept
    - Drug use a fact of life
    - Focus is on the harm
    - If not a cure, then care
    - Abstinence is desirable
    - Not always a realistic goal
    - Lowering addict transmission of infections diseases-needle exchanges
    - Minimize the harm, reduce crime
    - Most proponents of HR do not favor legalization

AJ 122

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Slide 115

Lesson Plan: cont.

- **Zurich, Switzerland experiment**
  - Containment of hard core users
  - Needle Park
  - Daily overdoses
  - Doctor's stationed in the park
  - Closed in 1992
  - Addicts moved to the train station
  - 1997-Gov't supplies heroin to enrolled addict
  - Crime rate lowered

AJ 122

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Slide 116

Lesson Plan: cont.

- **Dutch Drug Policy**
  - Drug use is a fact of life
  - Needs to be discouraged
  - User accountability
  - Minimize the risks
  - "soft" drugs vs. "hard" drugs
  - 1995-Possession or sale of 5 grams of Marijuana decriminalized
  - Does not apply to those under 18 yrs.
  - Lower rate of marijuana use than U.S.

AJ 122

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Slide 117

Lesson Plan: cont.

- **Education/Prevention**
  - Supply is determined by the demand
  - Looking for new ways to deal with problem
  - where best to spend \$\$
- **Lessons from "Traffic"**
  - Political game-addict don't vote
  - Families in denial
  - Waging war against our families
  - \$\$\$ drives the market
  - What will our legacy be?

AJ 122

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